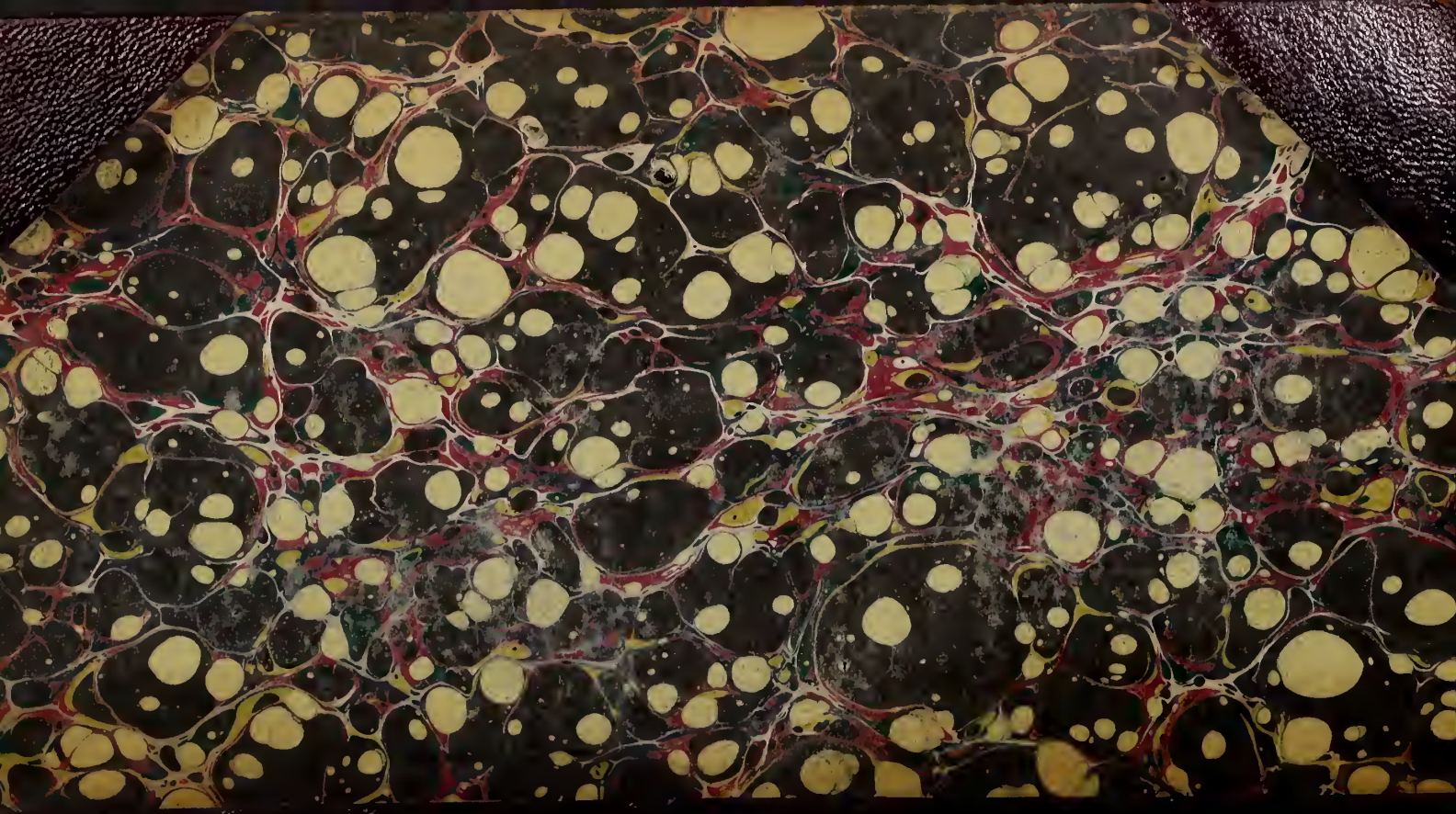
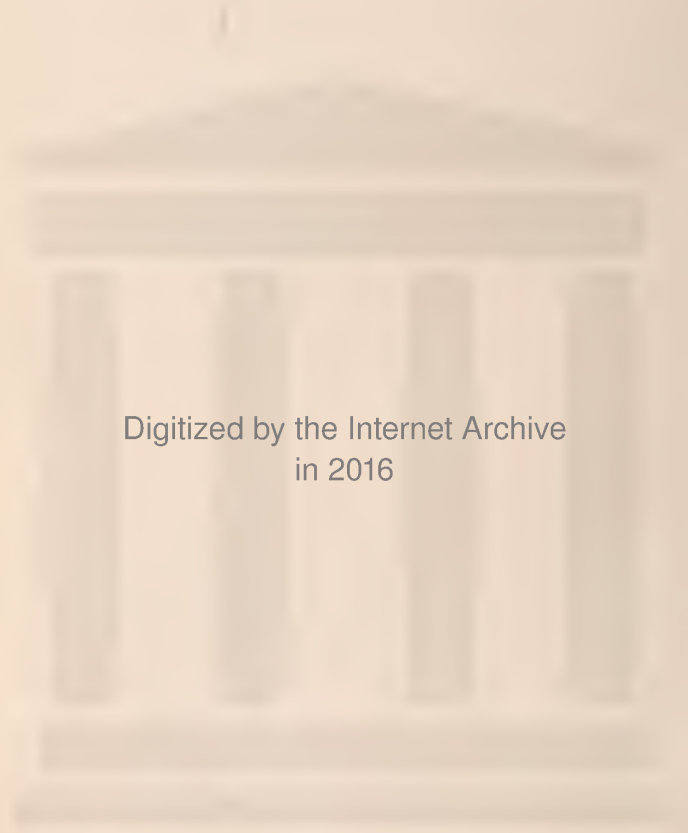


LIBRARY
OF THE
Theological Seminary.
PRINCETON, N. J.

RL

PER AS 472 .A84 v.13:1

Journal of the Asiatic
Society of Bengal


Digitized by the Internet Archive
in 2016

https://archive.org/details/journalofasiati1314asia_2

JOURNAL

OF THE

ASIATIC SOCIETY

OF

BENGAL.

EDITED BY

THE SECRETARY AND SUB-SECRETARY.

VOL. XIII.

PART I.—JANUARY TO JUNE, 1844.

Nos. 145 to 150.

NEW SERIES.

"It will flourish, if naturalists, chemists antiquaries, philologers, and men of science, in different parts of *Asia* will commit their observations to writing, and send them to the Asiatic Society, in Calcutta; it will languish if such communications shall be long intermitted; and will die away if they shall entirely cease."—SIR WM. JONES.

CALCUTTA:

BISHOP'S COLLEGE PRESS.

1844.

Contents.

PART I.

No. 145.

Page.

I.—On the Migratory Tribes of Natives in Central India. By Edward Balfour, Esq. Assistant Surgeon. Communicated by the Author to Jameson's Edinburgh Journal, ... 1

II.—Vocabulary of Goand and Cole Words. From Dr. Voysey's MSS. Ellichpoor, 16th December, 1821, ... 19

III.—On the History of Arakan.—By Capt. A. P. Phayre, Senior Assistant Commissioner, Arakan,.. 23

IV.—Bhâscaræ Acháryæ Siddhánta Shirómáni sic dicti operis pars tertia, Gunitadhiam, sive astronomiam continens, Latine vertit notasque adjecit, E. Roer, ... 53

V.—Summary description of two new species of Flying Squirrel. By B. H. Hodgson, B. C. S. 67

VI.—Proceedings of the Asiatic Society.—January, 1844, ... i

VII.—Officers and Members of the Asiatic Society for 1844, ... xiii

VIII.—List of Members, January, 1844, ... vi

IX.—Rules of the Society, ... xvii

No. 146.

I.—Tenth Memoir on the Law of Storms in India, being the Madras and Masulipatam Storm of 21st to 23rd May, 1843. By Henry Piddington. With a Chart,.. 69

II.—An Inscription from a Tablet in a Buddhist Monastery at Ningpo in China. By D. J. Macgowan, Esq. M. D. Surgeon of the Ningpo Hospital. With a Plate,.. 113

III.—A Description of the Country of Seisthan. By Lieut. R. Leech, Bombay Engineers, Assistant on a mission to Cabool. From the Political Secretariat of the Government of India, ... 115

IV.—Route from Candahar to Herat. From the Political Secretariat of the Government of India, ... 121

V.—Proceedings of the Asiatic Society.—February, 1844, ... xiii

No. 147.

Page.

I.—Tables for determining the Elastic Force of Aqueous Vapour in the Atmosphere and the Temperature of the Dew-point, by Observations of a dry and wet bulb Thermometer; computed agreeably to Dr. Apjohn's Hygrometric formula, under the direction of Capt. J. T. Boileau, of the Bengal Engineers, F. R. S., F. R. A. S. Superintendent of the Hon'ble E. I Company's Magnetic Observatory at Simla, ... 135

II.—Geological Map of Captain Herbert's Himalaya Survey, ... 171

III.—Notes on Moorcroft's Travels in Ladakh, and on Gerard's Account of Kunáwar, including a general description of the latter district. By Lieut. J. D. Cunningham, of the Engineers, 1843. Communicated by the Government of India, ... 172

IV.—Proceedings of the Asiatic Society.—March, 1844, ... xxi

No. 148.

I.—Notes on Moorcroft's Travels in Ladakh, and on Gerard's Account of Kunáwar, including a general description of the latter district. By Lieut. J. D. Cunningham, of the Engineers, 1843. *(Concluded.)* 223

II.—Report on the Agriculture and Land produce of Shoa. By Capt. Graham, Bengal N. I., of the Mission to Abyssinia, ... 253

III.—Report on the Route from Seersa to Bahawulpore, by Major F. Mackeson, C. B., B. N. I. Officiating Superintendent Bhutty Territory. 297

IV.—Note on a recent Fossil Fresh-water Deposit in Southern India, with a few remarks on the origin and age of the Kunker, and on the supposed decrease of Thermal Temperature in India. By Capt. Newbold, M. N. I., Assistant Resident, Kurnool, Madras Territory, ... 313

V.—Proceedings of the Asiatic Society.—April, 1844, ... xxix

No. 149.

I.—Note on the Mijjertheyn Somalees. By Lieut. C. J. Cruttenden, Assistant Political Agent, at Aden, ... 319

II.—Examination of a remarkable Red Sandstone from the junction of the Diamond Limestone and Sandstone at Nurnoor, in the Kurnool Territory, Southern India. Received for the Museum of Economic Geology, for Capt. Newbold, M. N. I. Assistant Commissioner, Kurnool. By Henry Piddington, Curator Museum of Economic Geology of India and of the Geological and Mineralogical Departments, Asiatic Society's Museum. 336

III.—Report of a Journey from Herat to Simla, via Candahar, Cabool and the Punjaub, undertaken in the year 1838, by order of his Excellency John McNeill, Esq. H. B. M. Envoy Extraordinary and Minister Plenipotentiary at the Court of Persia. By Major Todd, Acting Secretary of Legation, 339

IV.—Appendix to Mr. Blyth's Report for December Meeting 1842, *(Continued from vol.* XII, *p.* 1011.) 361

V.—Proceedings of the Asiatic Society.—May, 1844. xliii

No. 150.

Page.

I.—A Grammar of the Cashmeeree Language. By Major R. Leech, C. B., 1st Assistant Governor General's Agent, N. W. F. *(Continued.)* 397

II.—View of the principal Political Events that occurred in the Carnatic, from the dissolution of the Ancient Hindoo Government in 1564, till the Mogul Government was established in 1687, on the Conquest of the Capitals of Beejapoor and Golconda; compiled from various Authentic Memoirs and Original MSS. collected chiefly within the last ten years, and referred to in the Notes at the bottom of each page. By Colonel Mackenzie. 421

III.—Notices of various Mammalia, with Description of many New Species. By Ed. Blyth, Curator of the Asiatic Society's Museum, &c. 463

IV.—Proceedings of the Asiatic Society—June, 1844, ... liii

Index

TO PART I, VOL. XIII.

Page.

Agriculture and land produce of Shoa. Report on the. By Capt. Graham, ... 253
Appendix to Mr. Blyth Report for December Meeting, 1842 *(Continued from vol.* XII. *p.* 1011.*)* 361
Bhâscaræ Acháryæ Siddhánta Shirómáni sic dicti operis pars tertia, Gunitadhiam, sive astronomiam continens, Latine vertit notasque adjecit, E. Roer, ... 53
Buddhist Monastery at Ningpo in China. An Inscription from a Tablet in a. By D. J. Macgowan, Esq, ... 113
Candahar to Herat, Route from. From the Political Secretariat of the Government of India 121
Cashmeeree Language. A Grammar of the. By Major Leech, ... 397
Country of Seisthan. A Description of the. By Lieut. R. Leech, ... 115
Elastic Force of Aqueous Vapour in the Atmosphere and the Temperature of the Dew-point, by Observations of a dry and wet bulb Thermometer; Tables for determining the: computed agreeably to Dr. Apjohn's Hygrometric formula, under the direction of Capt. J. T. Boileau, ... 135
Examination of a remarkable Red Sandstone from the junction of the Diamond Limestone and Sandstone at Nurnoor, in the Kurnool Territory, Southern India. Received for the Museum of Economy Geology, from Capt. Newbold. By Henry Piddington, ... 336
Flying Squirrel. Summary description of two new species of. By B. H. Hodgson,.... 67
Fossil Fresh-water Deposit in Southern India. Note on a recent. With a few remarks on the origin and age of the Kunkur. By Capt. Newbold, ... 313

Page.

Goand and Cole Words. Vocabulary of. From Dr. Voysey, ... 19
Herat to Simla. Report of a Journey via Candahar, Cabool and the Punjaub, By Major Todd, ... 339
History of Aracan. On the. By Capt. A. P. Phayre, ... 23
Himalaya Survey. Geological Map of. Capt. Herbert's, ... 171
Law of Storms in India. Tenth Memoir on the. Being the Madras and Masulipatam Storm of 21st to 23rd May, 1843. By Henry Piddington, ... 66
List of Members, January, 1844, .. v
Mammalia, Notices of various, with Description of many New species. By Edward Blyth, ... 463
Migratory Tribes of Natives in Central India. Communicated by the Author to Jameson's Edinburgh Journal. By Edward Balfour, Esq. 1
Mijjertheyn Somalees. Notes on the. By Lieut. C. J. Cruttenden, ... 319
Moorcroft's Travels in Ladakh, and on Gerard's Account of Kunawar, Notes on. By Lieut. J. D. Cunningham, ... 172-223
Officers and Members of the Asiatic Society for 1844,..... xiii
Political Events that occurred in the Carnatic. View of the principal, from the dissolution of the Ancient Hindoo Government, in 1564, till the Mogul Government was established in 1687, on the Conquest of the Capitals of Beejapore and Golconda By Colonel Mackenzie, .. 421
Proceedings of the Asiatic Society for 1844, i-xiii-xxi-xxix-xliii-liii
Route from Seersa to Bahawulpore. Report on the. By Major F. Mackeson, ... 297
Rules of the Society, ... xvii

INDEX TO NAMES OF CONTRIBUTORS

TO PART I, VOL. XIII.

Page.

BALFOUR, EDWARD, Esq. On the Migratory Tribes of Natives in Central India, ... 1

BOILEAU, T. J. Capt. Tables for determining the Elastic Force of Aqueous Vapour in the Atmosphere and the Temperature of the Dew-point, by Observations of a dry and wet bulb Thermometer; computed agreeably to Dr. Apjohn's Hygrometric formula, under the direction of, ... 135

BLYTH, Mr. Appendix to Report for December Meeting, 1842. *(Continued from vol.* XII, *p.* 1011.*)* .. 361

———— Notices of various Mammalia, with Description of many New Species, ... 463

CRUTTENDEN, C. J. Lieut. Note on the Mijjertheyn Somalees, ... 319

CUNNINGHAM, J. D. Lieut. Notes on Moorcroft's Travels in Ladakh, and on Gerard's Account of Kunàwar, ... 172-223

Government of India, Route from Candahar to Herat. From the Political Secretariat of the, ... 121

GRAHAM, Capt. Report on the Agriculture and land produce of Shoa, ... 253

HERBERT, Captain. Geological Map of Himalaya Survey, ... 171

HODGSON, B. H. Summary description of two new species of Flying Squirrel. 67

LEECH R. Lieut. A Description of the Country of Seisthan,.... 115

———— Major. A Grammar of the Cashmeeree Language. *(Continued,)* 397

Page.

MACKENZIE, COLONEL. View of the Principal Political Events that occurred in the Carnatic, from the dissolution of the Ancient Hindoo Government in 1564, till the Mogul Government was established in 1687, ... 421

MACGOWAN, D. J. Esq. An Inscription from a Tablet in a Buddhist Monastery at Ningpo in China, 113

MACKESON, F. Major. Report on the Route from Seersa to Bahawulpore, 297

NEWBOLD, Capt. Note on a recent Fossil Fresh-water Deposit in Southern India, with a few remarks on the origin and age of the Kunker, and on the supposed decrease of Thermal Temperature in India, .. 313

PHAYRE, A. P. Capt. On the History of Arakan, ... 23

PIDDINGTON, HENRY. Examination of remarkable Red Sandstone from the junction of the Diamond Limestone and Sandstone at Nurnoor, in the Kurnool Territory, Southern India, ... 336

———— Tenth Memoir on the Law of Storms in India, with a Chart, ... 69

ROER, E. Bhâscaræ Acháryæ Siddhânta Shirómâni sic dicti operis pars teria, Gunitadhiam, sive astronomiam continens, Latine vertit notasque adjecit, ... 53

TODD, Major. Report of a Journey from Herat to Simla, via Candahar, Cabool and the Punjaub, undertaken in the year 1838,..... 339

VOYSEY, Dr. Vocabulary of Goand and Cole Words... 19

OFFICERS OF THE ASIATIC SOCIETY FOR 1844.

—o—

PRESIDENT.

The Honorable W. W. Bird, Esq.

Vice Presidents, ...
- The Right Revd. The Lord Bishop of Calcutta.
- The Honorable Sir J. P. Grant.
- The Honorable Sir H. Seton.
- H. W. Torrens, Esq.

Secretary,.. .. .. H. W. Torrens, Esq.,
Sub-Secretary, ... H. Piddington, Esq.

Committee of Papers.

Lieut. Col. W. N. Forbes, B. E.	Baboo Prosonno Comar Tagore.
Dr. J. Hœberlin,	S G. T. Heatly, Esq.
Lieutenant A. Broome, B. H. A.	N. B. E. Baillie, Esq.
C. Huffnagle, Esq.	W. Grant, Esq.

Curator Zoological Department Museum, .. E. Blyth, Esq.

Curator Geological and Mineralogical Departments and Museum of Economic Geology, ... H. Piddington, Esq.

Librarian,.. .. .. Dr. E. Roer.

Accountant and Assistant to the Secretary, Mr. W. H. Bolst.

Assistant Librarian, ... Mr. W. Fenwick.

Taxidermist, ... J. Nicolas.

Treasurers, ... Bank of Bengal.

Agent in London, ... Professor H. H. Wilson, India House.

Agent in Paris, ... Major A. Troyer, 55, Rue de la Pepiniere.

Booksellers and Agents in London,.. Messrs. W. and J. Allen, Leadenhall street.

By an oversight, the list of Members of the Society intended for the present No. was published with No. CXLIV. Another is now given, and the former one may be cancelled.

LIST OF MEMBERS

Of the Asiatic Society of Bengal, on 1st January, 1844.

Anderson, Major W.
Avdall, J. Esq.

Bird, Hon'ble W. W.
Barlow, Esq. R.
Bayley, Esq. H. V.
Bogle, Capt. A.
Boys, Capt. W. E.
Birch, Capt. F. W.
Bigge, Lieut. H. L.
Brandreth, Esq. J. E· L.
Broome, Lieut. A.
Benson, Esq. W. H.
Baker, Capt. W. E.
Benson, Lieut. Col. R.
Beaufort, Esq. F. L.
Batten, Esq. J. H.
Birch, Major R. J. H.
Bishop of Calcutta, Rt. Rev. Lord.
Burney, Lieut. Col. H.
Blundell, Esq. E. A.
Bacon, Esq. G. W.
Baillie, Esq. N. B. E.

Cameron, Hon'ble C. H.
Cautley, Capt. P. T.
Campbell, Esq. A.
Cheap, Esq. G. C.
Connoy Loll Tagore, Baboo
Cust, Esq. R.
Corbyn, Esq. F.

Dunlop, Esq. A. C.
Durand, Capt. H. M.
Dwarkinath Tagore, Baboo

Edwards, Esq. W.
Egerton, Esq. C. C.
Earle, Esq. W.
Everest, Lieut. Col. G.

Forbes, Lieut. Col. W. N.
FitzGerald, Major W. R.
Fulton, Esq. J. W.

Grant, Honb'le Sir J. P.
——— Esq. W. P.
——— Esq. J. W.
Gladstone, Esq. M.
Goodwyn, Capt. H.
Ganthony, Esq. J.

Hannay, Capt. F. S.
Hayes, Lieut. Fletcher
Heatly, Esq. S. G. T.
Hill, Esq. G.
Huffnagle, Esq. C.
Houstoun, Esq. R.
Hæberlin, Dr. J.
Hickey, Lieut. C. E.
Hodgson, Esq. H. B.
Hutton, Capt. T.

Irvine, Lieut. Col. A. (C. B.)

Jackson, Esq. W. B.
Jenkins, Major F.
Jameson, Dr. W.

Karr, Esq. W. Seton
Kistnoth Roy, Bahadoor, Rajah

Lushington, Esq. G. F.
——————— Esq. E. H.
Loch, Esq. G.
Long, Rev. J. Associate Member.

Maddock, Hon'ble T. H.
McQueen, Rev. J.
Mansel, Esq. C. G.
McKenzie, Esq. J.

Mouat, Esq. F. J.
Muir, Esq. J.
Mill, Esq. J. B.
Macleod, Esq. D. F.
Middleton, Esq. J.
Macleod, Capt. W.

Nicolls, Gen. Sir J.

Ommanney, Esq. M. C.
Ouseley, Lieut. Col. J. R.
O'Shaughnessy, Esq. W. B.

Peel, Hon'ble Sir L.
Pratt, Rev. J. H.
Prinsep, Esq. C. R.
Prosonoo, Coomar Tagore, Bahoo
Phayre, Lieut. A.
Piddington, Esq. H. Associate Member.

Robison, Esq. C. K.
Ryan, Esq. E. B.
Ravenshaw, Esq. E. C.
Rawlinson, Major H. C.
Rustomjee Cowasjee, Esq.
Ramanath Tagore, Baboo
Ramcomul Sen, Baboo
Ramgopaul Ghose, Bahoo
Radakanth Deb Bahadoor, Rajah

Sleeman, Lieut. Col, W. H.
Stacy, Lieut. Col. L. R.
Sanders, Lieut. Col. E.
Sutherland, Esq. J. C. C.
Seton, Hon'ble Sir H.
Strong, Esq. F. P.
Storm, Esq. W.
Stirling, Esq. E. H.
Spilshury, Esq. G. G.
Sutchurn Ghosal, Bahadoor, Rajah
St. Pourçain, Esq. J.
Strachey, Lieut. H.
Sprenger, Esq. A.
Stephenson, Esq. R. M.
Shortrede, Capt. R.
Stephen, Capt. J. G.
Syud Keramut Ullee, Associate Member.

Thomason, Hon'ble J.
Tickell, Lieut. S. R.
Taylor, Lieut. Col. T. M.
Torrens, Esq. H.
Trevor, Esq. C. B.
Torrens, Esq. J. S.

Winchester, Rev. W.
Walker, Esq. H.
Wade, Lieut. Col. Sir C. M.
Willis, Esq. J.
Withers, Rev. Principal G. U.
Wallis, Rev. A.
Wilcox, Major R.
White, Major M. G.

Young, Lieut. C. B.

Rules of the Asiatic Society.

The following is an abstract of the rules of this Institution which are now in force, including those printed in the Appendix to the sixth and subsequent volumes of the Society's Transactions.

Original Rules adopted from the Founder's Discourse, 15th February, 1784.

1.—The Institution shall be denominated the Asiatic Society, the bounds of its investigations will be the Geographical limits of Asia, and within these limits its enquiries will be extended to whatever is performed by man or produced by nature.

2.—Weekly Meetings shall be held for the purpose of hearing Original Papers read on such subjects as fall within the circle of the Society's enquiries.

3.—All curious and learned men shall be invited to send their Tracts to the Secretary, for which they shall immediately receive the thanks of the Society.

4.—The Society's Researches shall be published Annually, if a sufficiency of valuable materials be received.

5.—Mere Translations of considerable length shall not be admitted, except of such unpublished Essays or Treatises as may be transmitted to the Society, by Native Authors.

6.—All questions shall be decided on a Ballot, by a Majority of two-thirds, and nine Members shall be required to constitute a Board for such decisions.

7.—No new Member shall be admitted who has not expressed a voluntary desire to become so, and in that case, no other qualification shall be required, than a love of knowledge, and a zeal for the promotion of it.

Subsequent Resolutions of the Society which are in force.

8.—The future Meetings of the Society shall be held on the first Wednesday of each month; at half-past Eight o'clock in the Evening.

9.—If any business should occur to reqnire intermediate Meetings, they may be convened by the President, who may also, when necessary, appoint any other day of the week, instead of Wednesday for the stated Meetings of the Society.

10.—As it may not always be convenient for the President to attend the Meetings of the Society a certain number of Vice Presidents shall be elected annually.

11.—In case the President, and the Vice Presidents are absent at any Meeting, a quarter of an hour after the fixed time, the senior Member present shall take the Chair for the Evening.

12.—Every Member of the Society shall have the privilege of introducing as a visitor, any gentleman who is not usually resident in Calcutta.

13.—With a view to provide funds for the necessary expenses of the Society, an Admission Fee shall be established to consist of two gold mohurs, payable by every Member on his election, and each Member of the Society, resident in India (Honorary Members excepted) shall also contribute a gold mohur, quarterly, in the first week of January, April, July and October. Any Member neglecting to pay his Subscription for half a year, after it becomes due, to be considered as no longer a Member of the Society.

14.—All Members returning to India shall be called upon to pay their Subscription as usual from the date of their return.

15.—A Treasurer shall be appointed.

16.—In addition to the Secretary, an Assistant Secretary and a Librarian shall also be appointed.

17.—A Committee of Papers shall be appointed, to consist of the President, Vice Presidents, Secretary, and nine other Members to be elected annually, and any number no less than five, shall be competent to form a Committee.

18.—This Committee will select from the papers communicated to the Society, such as may appear proper for publication, and superintend the printing of the Society's Transactions.

19.—The Committee of Papers shall be authorized to draw upon the Treasurer for any sums requisite to defray the expense of publishing the Translations, and an order signed by a Majority of the Committee, will be a sufficient warrant to the Treasurer for paying the same.

20.—The Committee of Papers is authorized to defray any small contingent expenses on account of the Society which they may deem indispensable.

21.—Every Subscribing Member of the Society, on application, shall be furnished with a copy of such volumes of the Researches as may be published whilst he continues a Member, in return for his contributions, without any further payment.

22.—With a view to the more general circulation of the Asiatic Researches in India, the price of the 12th and future volumes, to Non-subscribers, shall be fixed at a gold mohur, and if several volumes of different years be purchased together, they shall be sold at 10 rupees each.

23.—The Agents of the Society in England shall be desired to purchase, and forward for the Society's Library, Books of Science and Oriental Literature, published in Europe, taking care that those purchases at no time exceed the funds arising from the sale of the Society's publications.

24.—The Committee of Papers shall be requested to furnish the Agents in Europe with such further instructions as may appear requisite for their guidance in the selection of books proper to be placed in the Library of the Society.

Library.

25.—The Library is open from 10 to 4 o'clock, between which hours, the Assistant Librarian is to be in attendance every day, Sunday excepted.

26.—None but the Members of the Society are allowed to borrow Books from the Society's Library, and no book is to be lent out of Calcutta without especial permission from the Committee of Papers.

27.—Books are to be borrowed by written or personal application to the Secretary; in either case, the person applying is to furnish a written receipt specifying the name of the work, and the time for which it is borrowed, at the expiration of which he is to return the book borrowed, or renew his application for an extended loan of it.

28.—The receipts for the Books shall be filed, and a Record kept of the Books lent out, to whom, and when lent out, and when returned.

29.—A list of the Books in the Library, and a Register of those lent out, are to be kept ready for inspection.

30.—All persons borrowing Books are to be answerable for their safe return, or are expected to replace them if injured or lost.

31.—The Librarian should be authorized to call in any work which is detained beyond the time fixed by the preceding rule.

32.—All works borrowed from the Library, should be returned once a year, viz. the first of October, in order to enable the Librarian to have the most efficient control over them, and to report to the Secretary on the state of the Library.

33.—Valuable manuscripts should not be removed from the Library, and no work from the Oriental division of the Library can be borrowed by Native gentlemen, not Members of the Society without a special order of the Secretary.

34.—All books being books of general or special reference in the various branches of Natural History in the departments of the Zoological, Geological, and Mineralogical Curators, to be understood by the Librarian to be Books of reference for the use of those officers, and as such, not to be lent out of the Library.

35—The Curators are farther to be allowed to take over for daily use, such Books as they may select for that purpose, giving the usual receipt to the Librarian.

Museum.

34.—On the 2nd February 1814, the Society determined upon forming a Museum for the reception of all articles that may tend to illustrate Oriental Manners and History, or to elucidate the particulars of Nature or Art in the East. The following Resolutions were at the same time passed upon the subject.

35.—That this intention be made known to the public, and that contributions be solicited of the undermentioned nature:—

1. Inscriptions on stone and brass.
2. Ancient Monuments, Mahomedan or Hindoo.
3. Figures of the Hindoo Deities.
4. Ancient Coins.
5. Ancient Manuscripts.
6. Instruments of War peculiar to the East.
7. Instruments of Music.
8. The vessels employed in Religious Ceremonies.
9. Implements of Native Art and Manufacture, &c. &c.
10. Animals peculiar to India, dried or preserved.
11. Skeletons, or particular bones of animals peculiar to India.
12. Birds peculiar to India, stuffed or preserved.
13. Dried Plants, Fruits, &c.
14. Mineral or Vegetable preparations in Eastern Pharmacy.
15. Ores of Metals.
16. Native alloys of Metals.
17. Minerals of every description, &c. &c. &c.

36.—That the hall on the ground floor of the Society's house be fitted up for the reception of the articles that may be procured. The plan and expenses of so doing to be regulated by the Committee of Papers and Secretary, and the person under whose superintendence the Museum may be placed.

37.—That the expense which may be incurred in preparing materials furnished in a state unfit for preservation be defrayed by the Society within a certain and fixed extent.

38.—All articles presented to the Museum shall be delivered in the first instance, to the Superintendent of the Museum, to enable him to make the acknowledgment, directed in the standing rules of the Society.

39.—A Register of Donations to the Museum, shall be exhibited each Meeting of the Society.

40.—The Committee of Papers shall adopt such means as may appear proper for making the intentions of the Society, in this respect, generally known.

41.—That the names of persons contributing to the Museum or Library of the Society, be hereafter published at the end of each volume of the Asiatic Researches.

Bibliotheca Asiatica.

The following Resolutions were passed on the recommendation of the Committee of Papers, under date the 2nd July 1806, but materials have not yet been received for publishing a volume of the work therein proposed.

42.—That the Society publish from time to time as their funds will admit of it volumes distinct from the Asiatic Researches, translations of short works in the Sanscrit and other Asiatic Languages, or extracts and descriptive accounts of books of greater length in those languages, which may be offered to the Society, and appear deserving of publication.

43.—That as this publication may be expected gradually to extent to all Asiatic books of which copies may be deposited in the Library of the Society, and even to all works extant in the learned languages of Asia, the series of the volumes, be entitled Bibliotheca Asiatica, or a Descriptive Catalogue of Asiatic Books with extracts and translations.

Physical Class.

The following Resolutions were passed on the 2nd January 1828:—

1.—That the Physical Committee of the Asiatic Society be considered as in existence and for the same purposes as formerly, exclusively of Medicine.

2.—That all Members of the Society, be Members of the Committee.

3.—That persons not belonging to the Society, may be elected as corresponding Members of the Committee, upon the recommendation of any three Members without being liable to any charge.

4.—That the Committee elect its own Officers.

5.—That the Committee frame its own rules, subject whenever likely to interfere with the Rules of the Society, to confirmation at a General Meeting.

6.—That the proceedings of the Society, and short notices of any interest, be published from time to time, as they accumulate, in such form as may be hereafter found convenient.

7.—That Papers of any extent or permanent interest, be published in the same type and form as the Researches, so as to admit of their being bound up with them.

8.—That the expense of these publications be borne by the Society.

9.—That the Physical department of the Museum be considered under the especial charge of the Committee, Mr. Tytler undertaking the care of the Osteological Specimens and Mr. Ross of the Minerals.

Translation Committee, 3rd September, 1828.

That a Committee of the Society be formed to communicate with the Committee of Translation of the Royal Asiatic Society, and carry their views into effect by procuring and transmitting such Manuscripts, Originals and Translations, as they may be able to obtain for the purpose.

That a Book be opened for Subscriptions of Ten Guineas per annum, each Subscriber; entitling him to a Copy of all the Works printed by the Translation Committee.

Oriental Publications for Sale, at REDUCED *prices, by the Asiatic Society.*

WORKS.	Rs.	Former Price.
Mahábhárata, vol. 1st. pages 831, vol. 2d, pages 868, vol. 3rd, pages 859, vol. 4th, pages 1007, royal 4to.	40	48
Large paper do. do.	50	61
Index to the 4 vols. of the Mahabharut complete.	6	0
Harriwansa, 563 pages, royal 4to.	5	6
Rája Tarangini, 440 pages, 4to.	5	20
Large paper, do. do.	8	12
Naishada, 917 pages, 8vo.	6	6
Sausruta, 1st vol. 378 pages, 2d vol. 562 pages, 8vo.	8	8
Fátawé A'lemgírí, 1st vol. 763 pages, 2d vol. 759 pages, 3d vol. 565 pages, 4th vol. 759 pages, 5th vol. 697 pages, 6th vol. 667 pages, royal 4to. per vol. ...	8	10
Ináya, 2d vol. 690 pages, 3rd vol. 682 pages, 4th vol. 937 pages, 4to. ...	8	10
Kházánat ul Ilm, 694 pages, 4to.	8	10
Jawáme ul Ilm ul Riazí, 168 pages, with 17 plates, 4to.	4	4
Anis ul Musharrahin, 541 pages, 4to.	5	5
Sharaya-ool-Islam, 631 pages, 4to.	8	15
Tibetan Grammar, 256 pages, 4to.	8	8
Tibetan Dictionary, 373 pages. 4to.	10	12
Asiatic Researches, per vol.	10	12
Burnouf Memoire sur deux inscriptions cunéiformes, 4to. 199 pp.	3	0
Burnouf Commentaire sur le Yacna, with notes &c. 2 parts, pp 945.	10	0

	Rs.	As.
Burnouf et Lassen, Essai sur le Pali, ou Langue Sacrée de la presqúile au de lá du Gange. Paris, 1826, pages 222, 8vo.	3	0
Elèmens de la Grammaire Japonaise, par M. M. Rodriguez et Remusat. Paris, 1825, pages 158, 8vo.	3	0
Ditto ditto Supplément. Paris, 1826, pages 31, 8vo.		
Contes Arabes, traduits par J. J. Marcel. Paris, 1835, avec notes, vol. I. pages 484, vol. II. pages 496, vol. III. pages 508, 8vo.	3	0
Brosset, Elémens de la Langue Georgienne. Paris 1837, pages 122, 8vo. ...	5	0
Klaproth, Vocabulaire et Grammaire de la langue Georgienne. Paris, 1827, pages 232, 1st part, 8vo.	4	0
Cronique Georgienne, traduite par M. Brosset, Text and Translation. Paris, 1830, pages 370, 8vo.	3	0
Choix de Fables de Vartan, en Arménien et en Francais. Paris, 1825, pages 96, 8vo.	1	8
Elegie sur La Prise D'Edesse, en Arménien. Paris 1828, pages 112, 8vo. ...	2	0
Chrestomathie Chinoise—Chinese Characters, 1833, pages 183, 4to.	5	0
Meng-Tscu, texte Chinoise, pages 161, 8vo.	3	0

Oriental Publications for Sale, at REDUCED *prices, by the Asiatic Society.—(Continued.)*

	Rs.	As.
Meng-Tseu, traduction Latine, par S. Julien. Lutetiæ Parisiorum, 1824, pages 593, 8vo.	6	0
Lassen, Institutiones Linguæ Pracriticæ. Bonnæ ad Rhenum, 1837, pages 167, 8vo.	6	0
Lassen, Anthologia Sanscritica. Bonnæ, 1838, pages 371, 8vo.	4	0
Lassen, Gita Govinda, Sanscrit et Latine. Bonnæ ad Rhenum, 1836, pages 180, 4to.	2	8
Chezy, Yajnadattabada, ou La Mort D'yadjnadatta, Text, Analysis and Translation. Paris, 1826, pages 142, 4to.	3	8
Chezy, La reconnaissance de Sacountala, Text and Translation. Paris, 1830, pages 665, 4to.	10	0
Geographie D'Aboulféda, Texte Arabe. Paris, 1837-40, pages 586, 4to. ...	5	0
The Travels of Ibn Batuta, translated from the Arabic Manuscript, by S. Lea. London 1829, 143 pages, 4to.	6	0
The Travels of Macarius, translated by F. C. Belfour. London, 1829, pt. I. 114 pages, 4to.	4	0
Memoir of the Emperor Jehanguire, translated from the Persian Manuscript, by Major D. Price. London, 1829, 141 pages, 4to.	4	0
History of the Afghans, translated from the Persian, by B. Dorn, part I. London, 1829, 184 pages, 4to.	5	0
Han-Koong-Tsew, or the Sorrows of Han, a Chinese Tragedy, translated by J. F. Davis. London, 1829, 28 pages, 4to.	1	8
Vocabulary of Scinde Language, by Capt. Eastwick.	1	0
Leachs Grammar and Vocabulary of the Baloochi and Punjabee Languages. ...	1	0

JOURNAL

OF THE

ASIATIC SOCIETY.

Notes on Moorcroft's Travels in Ladakh, and on Gerard's Account of Kunáwar, including a general description of the latter district. By Lieutenant J. D. CUNNINGHAM, *of the Engineers,* 1843.

[Concluded from page 222.]

LANGUAGE.

There are five different dialects spoken in Kunáwar, the words are monosyllabic or dissyllabic.

1*st.* The Milchan, or common ; the chief characteristics are the terminations *ang*, *ing*, *ung*.

The infinitives of the verbs end in *mig* and *nig*.

2*nd.* The Theburskud spoken at Soongnum, is very different from the Milchán, and the infinitives terminate in *lung* and *pung*.

3*rd.* The dialect used in Lubrung and Kannur, in which the infinitives of verbs end in *ma* and *na*.

4*th.* That spoken at Leedung, where the terminations of the infinitives are *ens*.

5*th.* The Bhoteea or Tartar.

The Milchan and Bhoteea are distinct tongues, and the same may be almost said of the Theburskud ; the other two are dialects of the

Milchán, and differ principally in the tenses of verbs and cases of nouns.—*Gerard, p.* 87, 88.

Captain Gerard might have added a sixth language or dialect; viz. that of the Kohlis or Chumars, noticed under the head of Religion and Caste. This differs as much from the Kunawaree, as that does from the Bhotee.

The different dialects of Kunawar show how various the speech of a rude people may be; and the localities of each kind of infinitive may prove, that the tract of country was occupied by one race in the first instance, and that in the three fertile, but secluded valleys of the N.E., a difference of speech arose. Láppá, Kanám and Sungnam are the principal places in these valleys, and each has its own tongue, the two former differing chiefly in the modifications of the nouns and verbs, while the dialect of Sungnam owes much to the neighbouring language of Tibet. Shásso, however, is in the same valley as Sungnam and near to it, and as the Kanám dialect prevails there, a comparatively recent migration to that place may be inferred.

In what is now called Upper Kunáwar, there are five villages on the left bank of the Sutlej, half of the inhabitants of four of which are Bhotees, while of the fifth, all are of that race. The Bhotees have also a village on the right bank in what is called Kunáwar Proper, (*i. e.* six instead of seven in all, as Gerard says, p. 101,) and I think it likely that they formerly occupied the Sutlej valley as low down as Cíhní, but gave way before the Kunawarees.

This would explain the Bhotee derivatives of the Upper Kunáwar dialects.

Milchán is the Rampur term for the common Kunawaree; in that language the term is Milchanang. I would say that the infinitives end in *mih'* and *nih'*, rather than in *mig* and *nig*.

Theburskud, or correctly Tibberkad, is also called Sungnam-pá-kad, but is frequently applied to all the dialects differing from the common. *Kad*, not *skad*, is a Kunawaree term for speech, language.

The infinitives of the Lidung or Lippa verbs, I would write as *ent* or *enh'*, rather than *ens*.

The annexed table gives a specimen of the dialects of Kunawar, (including those of the Bhotees and Kohlis,) while the note appended

*

to it shows their different localities. I add to this a specimen of the infinitives of verbs:—

English,—*To speak.*

Common Kunawaree, ...Lonhmih',
Lippa dialect, ...Lōdenh', or lodent,
Kánam ditto, ...Logmá,
Sungnam ditto, ...Lopang,
Bhotee, ...Zarchá,

Comparative Table of Words of Kunawar and the adjoining Bhotee Districts, (see also Mr. Hodgson's Literature and Religion of the Buddhists.)

English.	KUNAWAREE.			*Bhotee* of Pitti, Hangrang, Rungchung, &c.
	Milchâng, or common.	*Tibberkad*, or particular, when it differs from the common as specified.	*Chamangee*, or that of the Kohlis or Chumars.	
The World,	Dúníá, ...	.... ..	Dúníá, *or*.. .. .. Dés zjameh ínsá, *that is*, ... *Dés, jameh insán.*	Mímang.
God, ...	Isar, ...	....	'Ishar, Mahadeo, ..	Kontcho.
Man, ...	Mí, ...	....	Mánúsh,..	Mí.
Woman,..	Chasmí, Cháchatch, *a young woman*, ...	.. ....	Dëin, ...	Najúng.
Quadruped, .	Poshú, ...	Seantchan S.	Saktamtchúk,.. ..	Semtchan.
Bird, ..	Pía, ... Pfátch, *a small bird*,	.. ..	Choreh, or chóreh, chotúng, ..	Jía.
Insect,	Yúng, *winged*, Ong, *not winged*,	....	Makí, kír, patung,	Downg, *winged*. Bú, *not winged*.
Worm,.. ..	Káhong,..	....	Kahong, kírá,.. ..	
Fire, ...	Meh, ...	....	Ag, ...	Meh.
Air, ...	Lán, ...	....	Bághur, ...	Lungpo.
Earth, ...	Matang,..	....	Máti, ...	Sá.
Water,.. ..	Tí, ...	....	Páni, ...	Chú.

Note.—In Kunáwar there are three principal dialects. 1st. The Milchánang or ordinary dialect, which prevails chiefly in Lower Kunáwar, and on the left bank of the Sutlej in Upper Kunawar. 2nd. The Tibberkad, which is applied chiefly to that of Sungnam and the adjacent villages, Taling and Rushklang, but which includes, 1st, the dialect of Kanam of Labrang and Pilo, lower down on the same stream, and of Shásso in the Sungnam valley; 2nd, the dialect of Lippá of Asrang above, and of Janghí and Akpá below Lippá; the 3rd dialect is that of the Chumárs or Kohlis, a separate race.

In this Table S. signifies Sungnam, K. Kánam, and L. Lippa.

The *g* is always hard, and *ch* is always sounded as in choose, or as *tch* in thatch.

KUNAWAREE.

English.	*Milcháng*, or common.	*Tibberkad*, or particular, when it differs from the common as specified.	*Chamangee*, or that of the Kohlis or Chumars.	*Bhotee* of Pitti, Hangrang, Rungchung, &c.
Sun,	Yuneh, nih,	....	Dews, dewz.	Nímá.
Moon,	Goltchang,	....	Zot, zjot,	Dowá.
Stars,	Kar,	Karmá, L. K. S.	Táreh, táro,	Karmá.
Mountain,	Dokang,	Dungkang, LKS.	Donk,	Dák.
River,	Samundrang,	....	....	Sangpo.
Father,	Bábá,	Apá, L. K. S.	Bábá,	Aqú.
Mother,	Amá,	....	Amá,	Má.
Grandfather,	Tehteh, mehmeh,	....	Tehteh,	Mehmeh.
Grandmother,	Tehgo, apí,	....	Owh-aí,	Abí.
Child,	Chang, chanh,	....	Cheldo,	
Boy,	Chongchang,	Pomlangchang, L. K. .. .. Poshrichang, S.	Púshú, cheldo, *i.e. male child,*	Túgú.
Girl,	Chihchang, chimeh,	Chameh, L.K. S.	Dëin, cheldo, *i.e. female child,*	Búmo.
Uncle (father's brother,)	Gato, Bábá,	Chípa, L. K. S.	Bábá,	Aqú, chungga.
Aunt,	Náneh,	Aneh, L. K. S.	Mama, kant chúain,	Majúng.
Summer,	Rángdëaro, *that is warm season.*	Rabang dëáro, L. K. S.	Zaow or Rzaow-radëáro, *i. e. hot season,*	Chatpá.
Winter,	Liaskú dearo *i. e. cold season*	Katídearo, LKS.	Shelo-ra dearo, *cold season,*	Dangmo.
Grain,	Choa,	Brú, L. K. S.	Náj,	Dú.
Rice,	Ral-ralh,	....	Rhowl,	D.
Wheat,	Zot Rozat,	....	Ghëow, *Nasal,*	Dó.
Barley,	Takh,	Ta, L. K. Zat S.	Zho *or* zhaw,	Söa.
Marriage,	Tem,	Samchá, L. Namsha, K. S.	Zjanetch, ranekh,	Bangma.
Birth of man or animals,	Zarmíänmí,	Zarmíänma LKS.	Zoramnow,	Kehj.
Death,	Groh,	....	Groh,	
House,	Kim, kewm,	....	Ghor,	Kangba.
Stone,	Rak,	Ráh, L. K. Galhing, S.	Zani, zan,	Döa.
Brick,	It,	....	....	Pow (*unburnt brick.*)
Temple,	Labrang,	....	Labrang, thákúr choárá,	Labrang.
Image,	Múrat,	Kúndá, L. K. S.	Kunda, múk'h,	Kú.
Bridge,	Cham, jampa, *of wood,* tran torang, *of rope,*	Jampa *of wood* tran torang, *of rope,*	Sanggo, zangcham, zhotto,	Jampa *of wood* chazam *of rope or chain.*
Tree,	Bhotang,	....	Bhot,	Pang.
Leaf,	Patlang, patílang	....	Patrang, pateh,	Loma.
Flower,	Ú,	Ments, L. K. S.	Phúl,	Mendo.
Fruit,	Phalang,	P'hal, L. K. S.	Phol,	Dhïábo.
Horse,	Rang,	Shang, L. K. S.	Ghoro,	Tá.
Bull,	Dammas,	Ehtong, L. K. S.	Dám,	Lánggú, or langgu.
Cow,	Lang,	Rad, L. K. bahang, S.	Ghorú, ghow,	Ba.
Buffalo,	Mosh, moësh,	....	Moysh,	Maheh.
Dog,	Kwí,	Kaoi,	K....,	Kí.
Cat,	Píshi,	Píshi, L. K. *S.*..	Pishí,	Pushú.
Jackal,	Shálík,	Gánuk,	Shalti	Hazch, hajeh.

KUNAWAREE.

English.	*Milcháng,* or common.	*Tibberkad,* or particular, when it differs from the common as specified.	*Chamangee,* or that of the Kohlis or Chumars.	*Bhotee* of Pitti, Hangrang Rungchung,&c.
Sister, ...	Rings, shing, ..	....	Boen, *(nasal,)* ..	Shingmo.
Brother,.. ..	Bhäïá, ...	Beteh, L. K. S.	Bhaí, (ahteh, *eldest brother,*)	No.
Own Family,..	Pehrang, ...	....	Perí tabar, or tabar kabila,	Jingkang.
Kinsfolk, ..	Ang, pehrang, ..	....	....	Narang, grea.
Strange folk,..	Hehdeh, pardesí,	....	....	Miyulna.
The Head, ..	Bal,....	Pisha, L. K. S.	Mútkan, múnd,..	Go.
Hair, ...	Karra, ...	....	Bal, ...	Ta.
Face, ...	Toh, ...	Mamih, L. K. S.	Rú, ...	Gondong.
Eye, ...	Mík, ...	Mih, L. K. S. ..	Akhí, *(nasal,)* ..	Mik, mih.
Nose, ...	Takus, ...	Murh, L. K. S..	Nak, ...	Na.
Mouth, ...	Kaggang, ...	Aqat, L. K. ah, S.	Kahk,..	Ka.
Chin, ...	Chipkang, ...	Oskeo, L. K. S..	Choth, ...	
Ear, ...	Kanang, ...	Rippang, L. K. S.	Kánh,..	Namjok.
Forehead, ..	Piah, ...	....	Níral, ...	Piai.
Boy, ...	Déhang, aprang,	....	Deh, ...	Jukpo.
Arm, ...	Gúdh, ...	....	Hath, ...	Lakpá,
Leg, ...	Bang, ...	....	Kúndí, ...	Kangbá.
Right,.. ..	Zahong, ...	....	Dhákhná, ...	Yáfá.
Left, ...	Dehlang, ...	....	Bhäon, ...	Yanpa.
Month, ..	Gol, ...	Lá, L. K S. ..	Másáro, máswáro,	Dah.
Year, ...	Borshang, ...	Boshang, L. K.S.	Boras, borash, ..	Lo.
Day, ...	Dáir, ...	....	Diár, ...	Júh or juk.
Night, ..	Ratting, ...	Gungá, L. K. S.	Rat, rateh,.. ..	Ghanmo.
One, ...	Id, ...	Tíh, S.	Ek.	Chík.
Two, ...	Níshí, ...	Níshí, S.	Döí, ...	Ni.
Three, ..	Sum, ...	Hum, L. K.....	Tron, ...	Súm.
Four, ...	Pú, ...	Púï, L. K. pi, S.	Chár, ...	Zjí
Five, ...	Guá, Gnáí, ...	Gnáü, S.	Pánch, ...	Gná, *(nasal.)*
Six, ...	Tuk, ...	Túh, L. K. tuggí, S. ..	Choh, ...	Dúk.
Seven, ..	Tísh, ...	Snísh, L. K. nashl S.	Sáth, ...	Dún.
Eight, ..	Rhäï, ...	Gheh, L. K. ghäí, S. ..	Ath,..	Ghent.
Nine, ...	Gúï, guí, ...	Gú, L. K.... ..	Now, *(nasal,)* ..	Gú.
Ten, ...	Säï, ...	Sá, L. K. Chúï S.	Dos, ...	Chú.
Eleven, ..	Síbí, ...	Säï, L.K. chútï S	....	Chúkshík.
Twelve, ..	Sonísh, ...	Sanash, L. K. chuní, S. ..	.. ..	Chúní.
Thirteen, ..	Sorúm, ...	Sahom, L. K. chopsúm, S. ..	.. ..	Chuksum.
Fourteen, ..	Sápú, ...	Chopí, S.	....	Chubjí.
Fifteen, ..	Songhá, ...	Sanghá, L. K. chowang, S. ..	.. ..	Chonggó.
Sixteen, ..	Sorúkh, ...	Satú, L. K. chúrú, S.	.. ..	Chúrú.
Seventeen, ..	Sastísh, ...	Sastish, L. K. chubdan, S.	.. ..	Chúbdán.
Eighteen, ..	Sáraï, ...	Sarget, L. K. chobgent, S.	.. ..	Chúbghent.
Nineteen, ..	Sasgur, ...	Ságú, L. K. chúrgú, S.	.. ..	Chúrgú.
Twenty, ..	Nízá, ...	Nisá, ...	Bís, ...	Nishú.
Thirty, ..	Dëorníšá, ...	....	.. . .	Sumchú.

KUNAWAREE.

English.	*Milcháng,* or Common.	*Tibberkad,* or particular, when it differs from the common as specified.	*Chamangee,* or that of the Kohlis or Chumars.	*Bhotee* of Pitti Hangrang, Rungchung, &c.
Forty,	Nínísá,	Nishnisa, S.		Zjípchú.
Fifty,	Dhaïnísá,		Do-b s-o-dos,	Gnápchú.
One hundred,	R'há, ghëá,		Ra panch bis,	Ghëá.
One thousand,	Hazar,		Haz r,	Tong.
Ten thousand,	Sáï hazár,			Tongchú.
One hundred thousand,	Lák'h,			Búm.
One million,	Sáï lák'h,			Búmchú.
Monday,	Suárang,			Dowa.
Tuesday,	Manglarang,			Mingmar.
Wednesday,	Búdárang,			Lakpá.
Thursday,	Brespati,			Púrbú.
Friday,	Shúkárang,			Paksang.
Saturday,	Sanishras,			Penpa.
Sunday,	Etwárang,			Nímá.
Jan., (Magh,)	Mahang,			Dowachungnibá
Feb., (Fagun,)	Fauang,			Dowa, dúngbo.
March, (Cheit)	Chetrang,			Dowa nibá.
April, Báïsákh,	Báïsagang,			Dowa súmbá.
May, (Jet'h,)	Jeshtang,			Dowa zjíba.
June, (Assár,)	Asháraug,			Dowa girápá.
July, (Sawan)	Shownang,			Dowa dúkpá.
August, Bádor,	Bádrang,			Dowa dúnpá.
Sept. (Asowj)	Indromang,			Dowa ghetpá.
Oct., (Kátik,)	Katung,			Dowa gúpá.
Nov. (Maggar)	Mokshirang,			Dowa chúpá.
Dec., (Poh,)	Poshang,			Dowa chúk-chikpá.

Tibet, Name of.

Cashmir—Europeans.—Gnaree is the country between Busehur and Mansarawar, and the people eall themselves Keao. Tartar or Tatar is unknown here, and so is Tibet. Captain Turner says, the Tibetans eall their own eountry Pue-koeham, and Bootan is named by them Dukba. Tibet is understood by very few people, but the Cashmeerians apply it to Ladakh.—*Gerard, p.* 101.

Tibet is the English form of a Persian term. Tenboot is quoted by Malte Brun, II, 618, as equivalent to the kingdom of Boot, and thence perhaps, he says Tibet. *Ten* or *tan* now signifies ryots, subjeets, or rather perhaps servants and followers, but the derivation seems nevertheless a good one. Mr. Vigne, I see, derives Tibet from *tibba,* (or *tepe* in Turki,) a peak, and *bod.*—*Travels, II,* 248.

I never heard of the term Pue Koachim, nor could I get a meaning to Pue as a single word. The Keao of Gerard seems to be connected with Koachim, and both may be so with Ghea or Gheaneh, by which is understood China, or the country of the Emperor.

Gnaree, (Gnari,) is of greater extent than is allowed by Gerard, (see under the head *chanthan,* name.) It is called Beang by the Kunawarees, and hence *beanghee,* applied to wool.—*Gerard, p.* 115.

Dukpa is the term applied to shepherd tribes generally, and it must have been erroneously identified with Bootan.

I may here add a word regarding Cashmir. It is called by the Bhotees and Kunawarees, Katch or Katchi simply, or Katch-yul, *i. e.* the country of Katch. *Mr. Vigne* (*Travels II,* 44-46) enlarges on the frequent occurrence of the word Kash; but without giving it the many geographical positions which he does, and even *he* omits some, it is probable that a tribe of the name once possessed the whole course of the Indus, if indeed the word has not a more general meaning and a wider application. *Kotch* is the common Persian term for migration, moving about, &c. Richardson says, there is a wandering tribe of Arabs so called, and to the present day there is in Afghanistan, a race of wandering Mahometans termed Kotchi. Katch, however, might at one time have been applied to Cashmir, to Cutch Bhooj, to Cutch Gandwa, and to the greater part of Chachar in its signification of a swamp or low country, and this would leave Kotchi unencumbered, and meaning simply wanderer.

It appears till within the last 70 or 80 years, the Cashmirees traded through Kunawar, and in several villages there are still to be found the graves of these carriers or dealers. In Kanam, a temple sacred to a *deota* or hill spirit, has been erected on the site of a house which belonged to the Cashmirees, and up to the present time, the villagers sacrifice a goat to the god of their former guests, in imitation, they say, of their practice.

Throughout Tibet, Europeans are called *filing, (feeling,* see also *Mr. Vigne, II,* 326). The origin of this appellation is worthy of some inquiry, as I have been informed, by a man of knowledge and research, that it is used by the Chinese writers before the conquests of the Mahometans could have made *Fwang,* familiar to the ears of orientals; and that it may have a more direct connection with the

Varangians, well known to us as the guards of the Byzantine Emperors, than with the Franks of Charlemagne or of Godfrey, through a Persian medium.

KUNAWAR, NAME OF.

At Le this is called *maun*, tea; *maun* being one of their names for Bishahar.—*Moorcroft, II*, 353.

Kunawar called also Koorpa.—*Gerard, p.* 1.

Maun, I have usually heard pronounced *Man* (*maun*). Kunu is the ordinary Bhotee for Kunawar, and Kunupa or Kunpa means Kunawaree, or a man or thing of Kunawar.

Kurha is the Kunawaree for *pusi*, a kind of bread fried in oil.

Chanthan, i. e. *Zjangtang—Name.*—Along the eastern frontier of Ladakh in an almost semicircular line is the province of Chanthan, (*Moorcroft, II*, 360-1), or snow country, known to the Bhotias as Hundes, and to the Tibetans as Nari.—*Ditto, Note.*

Chanthan is properly Zjangtang, and is a descriptive, not a geographical, division of Tibet. *Zjang* means north, and *tang* means a plain or open hill or broad valley, and the tracts between Gano and the Karakoram range, are denominated Zjangtang, or the northern plains, from their comparative flatness, and from their position relative to Garo. The shepherd tribes of Tibet are called in Bhotee *zjangpa* and *dukpa*, and Changtang or Zjangtang would thus become equivalent to the shepherds of the plains, but I prefer the derivation of the northern plains, (see also Changpa, *Mr. Vigne's Travels*, II, 343). The Sikhs have corrupted Zjangpa into Champa, and give their *Chanthan* a very wide signification.

Nari includes these plains, as also the limited Chang of the Bhotees, and indeed all Tibet between Ladakh and Zunga, eight days' journey down the Burampooter. This place may be the Chang-hai Kanagher of the maps, which is about eight days' journey for a horseman from the sources of the river, and Zjang or Chang is no doubt the Dzang, &c. of our maps, by which term the Chinese seem to understand Tibet generally; but towards Garo and Lassa, Chang and Zjang mean two subdivisions only.

The goats which graze on the plains of Zjangtang produce the finest shawl-wool.

Chanthan, i. e. *Zjangtang*, *History of.*—Chanthan was formerly subject to independent princes, but their authority gradually merged into the supremacy of the chief pontiff at Lassa.—*Moorcroft, II.* 364.

These independent princes were Hindoos, and claimed a Rajpoot descent, (see also *As. Res. XII.* 434.) Their chief place was Chaprang on the Sutlej, and they ruled over the districts around the Mansarawar lake, and westward as far as Ladakh. The Pitti valley was also their's. In a war with the Ladakhees, the Raja was hard-pressed, and he asked aid from Lassa; but before assistance arrived, he was accidentally killed, or as one story has it, he was put to death by the Ladakhees while in the act of offering tribute. The Lassa force advanced and expelled the Ladakhees, but as the Chaprang family was extinct, the Lassa authorities retained the country in their own hands. A treaty was formed with the Ladakh Raja, and he married a daughter of the Lassa commander. The district of Pitti was given to Ladakh as the bride's dower, and 20 houses in the neighbourhood of Menser or Misser were added to it. A Raja named Kehar Singh, of Bissehir, was at this time on a pilgrimage to the Mansarawar lake; he formed a friendship with the Lassa leader, and perhaps gave his countenance to the usurpation of Chapran; for at this time two villages on the left bank of the Pitti river are said to have fallen under Bisseher.

The whole of the above is the common story only, and the events are said to have taken place towards the beginning of the last century with regard to the possession of Pitti. Another account states, that it was given to Ladakh, on the occasion of one of the sons of the Raja becoming the Grand Lama.

At p. 101, Gerard says, that certain villages of Tartars on the Sutlej, after many contentions between the Kunawarees and Chinese, were given up by the Grand Lama of Lassa for the support of the Teshigang temple, and adds in a note, that this temple although in Kunawar, is still partly supported by the Grand Lama. It is not so at present, for the temple is maintained from the produce of the lands attached to it, aided by its neighbouring village Namgheá and the contributions of the pious; nor would the Grand Lama, who is of the yellow sect, give assistance in his religious capacity to the

temple of a red sect. He may, however, have interfered in the dispute mentioned.

Garo, Name of.—Gardokh, called also Gartokh, Ghertope or Garo, itself is little else than an encampment, &c.—*Moorcroft, II,* 363. Garoo, Gartop, Gur, Yoogar, Zhoogar or Gurtokh, is a collection of black tents inhabited by pastoral tribes for six months. In winter, the Tartars retire to Eegoong, two stages down the stream, and the Chinese governors reside at the fort of Tuzheegong, where they have houses.—*Gerard, p.* 144.

There are *two* Garos, *one* an encampment where the fair is held, on the right bank of the Eegong or Higong river; this is called Garyersa by the Bhotees or Ram Garo, (*Yerram.*) The other on the left bank of the Higong, and two marches lower down, is a permanent place, and the winter residence of the governors. It is called Gar-gunsa, or snow Garo by the Bhotees, (*gun*, snow.)

Gardokh, Gartokh, Ghertope, Gartop, &c. are variations of Gartohs (the *h* being aspirated.) *Toh*, denotes place, and is equivalent to *abad* in Persian, and thus we have Gartoh, Rohtoh, (not Rohtuk or Rohdokh,) and perhaps other towns or places. The name Gartoh is chiefly used by the traders of Kemaon and Gurhwal as I have heard, Garo is the term usually given by the Kunawarees.

Yoogar, Zhoogar or Jugher means, *par excellence*, the residence of the governors. *Jugh* indeed implies the residence of any great man, but its simple meaning is to sit, to remain, as I have heard.

Eegong or Higong is a river, not a town, (see Eekong-choo, p. 6 and 23, Gerard,) and I have not heard that there is a fort at Tazheegung or Teshigang, which is a monastery.

Uchang, Lassa.

The court of Ouchong or Lahassa, have sent the most particular instructions.—*Gerard, p.* 105.

Uchang, (or *Utsang, Tib. Gr. p.* 197,) is a term of frequent application, and it includes both Lassa and Teshi Lonbo. U, is the province or district containing Lassa, and Chang (Dzang, Dshan, &c. &c.) is the name of the one containing Teshi Lonbo; and Uchang may be used as a short mode of expressing the union of the civil and spiritual powers.

The Yul-sung of Mr. Vigne, *Travels, II,* 249, is I imagine another form of Uchang, although *yul* means country, and also village.

The four Rivers, (i. e. the Indus, Burrampooter, &c. &c.,) and the Mansarawar Lake.—The river that may be regarded as the most striking and important feature in the geography of Ladakh, is the great eastern branch of the Indus or Sinh Khabab, the river that rises from the Lion's mouth, in reference to the Tibetan notion, borrowed perhaps from the Hindus, of the origin of four great rivers from the mouths of as many animals; as the Indus from the lion's mouth; the Ganges, Mab-cha Kha-bab, from that of the peacock; the Sutlej, Lang chin Khabab, from that of the elephant; and the Ster-chuk Khabab, or river of Tibet, from the mouth of the horse.—*Moorcroft, II.* 261.

Major Rennel says, the river that runs from Lanken, that is, Lanka, lake of Du Halde, is named Lantshon, or by Dr. Gilchrist's way of spelling, Lankchoo or Langchoo, for *k* and gare interchanged. Now this is little different from what the Sutlej is called in Chinese Tartary, that is, Lang Zhingchoo, or Langhing Kampa. I could not ascertain the meaning of Zhing, but it appears to have nothing to do with the name of the river, for the Indus is named Singhechoo or Singzhingchoo, as well as Singzing Kamper, and the last word means river.—*Gerard, p.* 23, 24.

The usual name of this river (the Indus) has been mentioned, but it is likewise called Kampa-choo and Sampoo, or Sangpo, all of which words in the Tartar language signify river.

The third river is said to be larger than the Indus, and is called Tamjoo, Damchoo or Erechumbo; that is, the Brahmapootra. The first word is recognized in the Tzango or Tzancire of Father Georgi, who crossed it on his way to Lhassa, and Captain Turner mentions the last at Teshoo Loomboo.

The fourth river is the Gogra.—*Gerard, p.* 133, 134.

The four rivers are the Indus, the Sutlej, the Kali or Gogra, and the Burrampooter; and the names are as follows: the Indus, Singchin Kabab or Kampa; the Sutlej, Langchin Kabab or Kampa; the Gogra, Mamchin Kabab or Kampa; and the Berampooter, Tacho or Tamjood Kabab or Kampa.

Sing is lion, *lang* is bull, (not elephant, although the Tibetan for elephant simply means, as I hear, great bull). *Mam*, is peacock;

tacho may be interpreted holy horse; *ta* being the Tibetan for horse, and *cho* being religion or the religious books. *Chin*, (the *zhing* of Gerard) is great, and *khabab* or *kabab*, and *khampa* or *kampa* are the same word, and mean "out of the mouth of." *Ka* or *ka* is mouth, and "*bab*" is "out of," or "issuing from;" and *khampa* or *kampa* is got by pronouncing "*kabab*" short, and adding the usual termination, "*pa*," thus *kababpa* or *kampa*. *Kampa* is therefore a vulgarism, nor could I ever hear that it means a river, as Gerard says.

The common legend, connected with these rivers are, that the Indus is named of the lion, from the bravery of the people who dwell along its banks. The Sutlej is named of the bull, from the violence of its stream, which roars and foams over rocks. The Gogra of the peacock, from the beauty of the women of the country through which it runs; while the Burrampooter is designated of the horse, from the excellence of the horses which pasture on its banks. The Sutlej indeed still rushes along with much of its ancient fury. Peacocks are still to be found on the banks of the Gogra, and its women may still be beautiful; but the people along the Upper Indus are no longer a valiant race, and the men of the Burrampooter eagerly purchase the horses of Yarkand and other places, as superior to their own. The name of the Burrampooter may require more examination. *Ta* meaning, as I hear, a certain horse known to tradition or history, as well as horse in general. The designation is rendered more particular by the addition of *cho* or religious, and it may have some connection with a settlement or conquest of the country by the horsemen of the northern plains.

Concerning the sources of the four rivers, a few words should suffice, as we have but few certain foundations to build upon, but the following extracts from Gerard may be quoted.

Mr. Moorcroft subsequently found out, that the stream which issues from Rawun Rudd is the Sutlej, *p.* 23. All accounts agree that the largest stream issues from the western corner of Rawan Rudd, or Langa, *p.* 27. Mr. Moorcroft could discover no outlet to this lake, (the Mansarawar,) although he formerly heard that a communication existed between Mapang and Lanka. My information is positive, that about twenty years ago, a stream which was rapid and crossed by bridges, ran from it into the Rawun Rudd, but is

since dried up, and the Lamas who reside on the banks, have an idea, that a subterraneous communication exists. The water of this lake, (the Mansarawar,) is said by Mr. Moorcroft and all my informants, to be quite fresh and well-tasted, while according to the Quarterly Reviewers, every lake without an outlet must be salt. Without supposing an outlet, it is difficult to account for the rise and fall of the lake, which are mentioned by every one, *p.* 138-9, (other extracts of a similar tenor might be made.) The natives, speaking generally, say, the sources of the above three rivers, and also of the Gogra, are at Mansarawar, by which nothing more is meant than in the vicinity of that place.—*Gerard, p.* 135.

The Tibetans call the Mansarawar lake, Mapang, and the Rawan Hrad, Langa. The name of the latter lake, if unconnected with Lanka and Rama's expedition, is perhaps the strongest argument we yet have for its being the source of the Sutlej, that river being termed by the Tibetans of the *lang* or bull. After many inquiries, I could not satisfy myself that the two lakes communicated, the one or the other, although traditions were mentioned to me to that effect, and my present belief is, that they are separated by a ridge of some elevation, an impression to which I think the perusal of Moorcroft's Journal, (As. Res. Vol. XII,) would likewise lead. I also feel persuaded, after many inquiries made with care, that the Rawan Hrad gives rise to no river. At the same time I confess, that my informants had never paid any attention to the point, they being quite satisfied with the legends which made the rivers rise in the holy lake undergound, or in some way.

Captain Gerard observes, that the natives, speaking generally, place the sources of the four great rivers at Mansarawar. He may mean that the holy hill of Gangri, which is the north of the lakes, and to make the circuit of which is a religious merit, gives rise to the four rivers. Such is agreeable to the majority of the descriptions or legends I have heard, and such is moreover literally true of the Indus which rises to the north of the mountain of the Sutlej, which has one source at least among its western ravines, and perhaps also of the Burrampooter, which takes its rise in all probability among its eastern off-shoots, while I have heard the story made good by the assertion, that the Gogra arose in the Mansarawar lakes, *i. e.* on the southern slopes of Gangri.

Captain Gerard remarks, that the existence of an outlet to these lakes is evident, because their waters rise and fall. This argument, however, would rather prove there was no outlet; the tendency of such an opening being to reduce the rise and fall, while in the present case, if the outlet were very free, it might reduce the variation of heights to almost nothing, for the feeders of the lakes are not large, and the slow melting of snow does not, like heavy rains, cause a sudden influx of water. Now Moorcroft in August, (1812,) considered the rise and fall to amount to four feet, and as the lakes are not I would say, (judging from the analogy of such of the streams north of the Himalayas as I have seen,) at their lowest until the middle of November, the rise and fall of the Mansarawar may be estimated at six or seven feet, a difference which in my opinion precludes the probability of a free egress for its waters, although it does not absolutely prove there is no such egress. The rise and fall however of Rawan Hrad are not known, and this argument does not affect the rise of the Sutlej in *it*. My belief, however, at present is, that the river has no connection with the lake, and Gerard, when he says, that the Sutlej has its origin in the lake, (*pp.* 27 *and* 137,) and adds, that Moorcroft found such to be the case, (*p.* 23,) asserts more than Moorcroft's narrative warrants. He distinctly says, he left the point unsettled, and does not appear to argue either way. *(See As. Res. XII.* 473.*)*

The main eastern branch of the Indus rises to the north of the Gangri hill, and is joined by the Higong (Heegong) or Garo branch at Teshigang. This eastern branch of the Indus, even when joined by the Garo branch, is not a broad, a deep, or a rapid stream, and is generally fordable until within a few marches of Leh. The Shayuk, or the branch rising in the Karakoram hills, is described as a more turbulent, and perhaps as a larger stream.

The Feeders of the Pitti River.—This river, (the Pitti,) has five branches. First the Para, issuing from Chumorcreel lake; it runs about sixty miles, and is then joined by the Zang-cham, a large and rapid stream; six or eight miles lower down it receives the Speetee, formed of two principal branches. Little further down, the united stream is joined by the Chaladokpo.—*Gerard, p.* 30, 31.

There is no separate feeder of the Para, termed the Zangcham, but Zangcham is a place on the right bank of the Para, about 3

or 4 miles above its junction with the Pitti, where there are sulphurous hot springs on both sides of the river, (temperature about 120.) The Chaladokpo is an inconsiderable rivulet, and *docpo* is indeed the word for a brook or torrent.

The Lee or Pitti, is composed of three principal branches only; 1st, the Lossar or Pitti Proper; 2nd, the Pin; and 3rd, the Para, which is nearly equal in volume to the united stream of the other two where it joins them. The three streams are laid down with, I think, considerable accuracy in the map accompanying Moorcroft's Travels.

Ti or Tee—(Water).—From a valley to the south descended the Gnuinthichu, a deep and rapid river.—*Moorcroft, I.* 209.—The other (river,) the Kakthi.—*Ditto, p.* 214, which (river) then takes the name of Sar or Lingti.—*Ditto, p.* 221, *(and also in other places.)*

In Kunawaree *ti* is water, and from the way in which the word is used in the above quotations, it is probable it has the same meaning in Kulu, (in which district Moorcroft was at the time.) *Gniun, p.* 209, is the name of a species of wild goat; not however the *skin* or *kin* of *p.* 311, *vol. I.*

Lingti or *Falung Dinda.*—It (an insulated rock) is called Lingti by the people of Kulu, and by those of Ludakh, Falung Dinda.—*Moorcroft, I.* 220.

Lingti is perhaps wrongly applied here; it is probably the Sar or Lingti, p. 221.

Lingti may be, water of separation—thus Ling seems to be used in composition in Upper Kunawar, and the adjacent Bhotee districts are equivalent to "side" in English: as "the north side," or "this side;" and in the same tract, the four cardinal points are called *lingji*. *Ti* is most likely water; see observations on the word.

Falung means simply a large block, and *dinda* means, "even with," so the term may be "the block even with boundary," or "the block on the boundary."

Climate.—Frost with snow and sleet commences early in September, and continues with little intermission to the beginning of May. From the middle of January to the beginning of February, we found the thermometer out of doors at night seldom above 15°, and on the 1st February, it was as low as $9\frac{1}{2}$°, &c. &c.—*Moorcroft, II.* 267, *&c.*

The winter (in Kunawar) is often rigorous. The winds blow with the greatest violence in October, and later in the year. Their direction is of course influenced by the valleys, but on peaks upwards of 20,000, and at heights of 16,000, the winds were always W. or S. W.—*Gerard, p.* 62.

In the Hungrung, district (of Kunawar,) with the exception of March and April, in which months there are a few showers, the uniform report of the inhabitants represents the rest of the year to be almost perpetual sunshine, the few clouds hang about the highest mountains, and a heavy fall of snow or rain is almost unknown. The depth of snow is usually a foot, and two are very rare.—*Gerard, p.* 95.

At Changgo in Hangrang, about 10,000 feet above the sea, the thermometer at day-break on the 15th December 1841, was 6° below zero. At Churet on the Para, 16 miles above Changgo, and above 12,000 feet above the sea, the thermometer was 13° below zero on the 17th December at day-break, and it never fell lower during my residence there, that is, until the 11th February 1842. It was, however, very often below zero, as for instance, at day-break, on December 25th 1841, it was *minus* 12°, and on February 6th 1842, it was *minus* 6°. At Churet during January, the thermometer, so suspended that the sun's rays played freely on the bulb, varied from 50° to 58° when highest. Churet is at the bottom of a deep and narrow valley.

In the Hangrang and surrounding districts, in 1841, snow commenced regularly on the 27th November. From that date until the end of February 1842, it snowed more or less heavily, and nearly all day and night, for 39 days; it was cloudy or hazy, and snowing on the heights for 34 days, leaving 21 fine clear days only out of 94. The days of heavy snow were days of comparative warmth, the thermometer being 20° or 25° at day-break. The snow where not drifted, did not any where exceed $2\frac{1}{2}$ feet.

At Shalkan on the Pitti river, about 10,500 feet above the sea, the thermometer in June, July, and August 1842, may be said to have ranged at sun-rise from 45° to 55°, and at sun-set from 60° to 70°. The temperature of the air when warmest was in the shade about 85°. On two or three occasions particular circumstances raised the mercury above, or depressed it below, the mean figures I have given.

During 1841-42, the winds in the districts above-mentioned, blew almost constantly from the South or South-west, as noticed by Gerard. A northerly wind was of rare occurrence. During the winter months, the wind was such as would be termed high or strong, and it was frequently varied by gusts of great violence. During the summer, the wind usually arose about noon, blew with moderate force, and subsided when night had fairly set in. The constancy of the wind from one quarter deserved some attention.

Of the seasons towards the junction of the Sutlej and Pitti rivers it may be said, that there is frequent snow from the middle of November to the middle of March; occasional light snow or rain according to the elevation, till the end of April; but May is fine, and a very pleasing month after the dreariness of winter. In June and early in September, there are some light showers. In July, August, and during half of October, showers are rare, but the sky is frequently cloudy or overcast. The occasional showers of the lower spots are falls of snow in the higher hills; and the ranges may be seen all hoary down to a certain level, the division being horizontal and well defined, while in early spring, the valleys remain filled with snow while the ridges are clear. Towards the middle of October, snow begins to fall on the lower peaks from time to time, and towards the end of November, it may be looked for every where; years however have been known in which no snow fell, or at least none to speak of.

Rain and Snow—Mud Walls.—As a proof of the absence of rain and snow, (in the Bhotee districts adjoining Kunawar,) I may mention, that the houses in Spitti are half-built of stones, with the upper story of unburnt bricks.—*Gerard, p.* 95, *Note.*

Snow falls frequently or almost constantly in these districts in the months of December, January and February. Walls of unburnt bricks are besides no argument for the absence of snow and rain. In India, the walls of houses are of mud, and in the N. W. Provinces the roofs are also of the same material. In the Bhotee districts in question, as elsewhere, the people clear the roofs of their houses of snow after each fall. The rain is seldom if ever so heavy as to have any effect.

Snow Glaciers.—Divided by precipitous mountains of amazing height most usually veiled in everlasting snow, *Gerard, p.* 5; vast

impending cliffs fringed with dark forest and topped with mountains of indestructible snow, appear on every side.—*Ditto, p.* 12. The snow beds that occurred on the road to the Pass must have been the accumulation of ages.—*Ditto, p.* 159.

It is to be regretted that the Gerards did not employ the same accuracy in general description, which they brought to bear with so much success, in ascertaining positions and in measuring the heights of mountains. Were snow everlasting or indestructible, or did it continually accumulate, the hills would always, and not usually, be covered. They would also increase in height, which they do not. The hills are indeed perpetually covered, but this is owing to the annual fall, and not to the indestructibility of snow.

Snow is blown from the tops of hills, or it falls in avalanches, and melts, or it becomes a mass of half-ice and half-snow, gradually melting above and below, owing to the superior heat of the atmosphere and of the earth on either side of it. On the slopes of hills, the water so produced, sinks and re-appears in springs at lower levels; in ravines, where there is always an accumulation of frozen snow, of some, but not of a *perpetually* increasing thickness, the superior warmth of the rocks aided by springs, melts the frozen mass, and forms a stream below it; while the atmosphere melts and forms a stream on the upper surface of the congealed snow.

In the steep, narrow, and irregular sided ravines of Upper Kunawar, I cannot say that I have seen any glaciers properly so called; but the masses of frozen snow at the bottoms of these ravines, are glaciers in every respect save in motion; the smallness of their bulk, and the varying width of the ravines do not admit of gravity overcoming friction, and the mass is unable to descend. In the higher parts of the hills, there are no doubt glaciers on a small scale.

Winter Travelling.—The people say, that the highest Passes might be traversed even in the middle of winter, were it not for the severe frost that prevails in these serene regions, which is made more keenly sensible from the great scarcity of fire-wood. The road from Shealkar (in Kunawar) to Ladakh is travelled throughout the year, and indeed January and February are the usual months in which the Kunawarees visit Leh, the capital.—*Gerard p.* 96. The road to Ladakh is never shut by snow.—*Gerard, p.* 111.

The highest Passes could be traversed in the depth of winter in spite of cold, were it not for the violent winds and uncertainty of the weather. The drifting snow conceals the track or road, and overwhelms the bewildered traveller, already benumbed by the piercing wind. If, however, a calm day be chosen, and a number of cattle be driven before to tread down the soft snow, any Pass may be crossed with comparative safety.

After the falls of snow and the strong winds cease, that is in March, April, and May, the surface of the snow on the hills becomes hardened, and admits of travelling with ease.

No people go from Kunawar to Leh in January and February, who can avoid doing so. The Kunawarees set out on their journies in April and May, and return in August, September and October; some remain at Leh over the winter. Travellers in the winter should always be accompanied by villagers of correct local knowledge, as otherwise, a person may attempt to cross a deep ravine or gully, and become lost in the deep soft snow.

The Sutlej, &c. arrested by frost.—In winter, most of the streams that join it are arrested by frost, and the Sutlej itself is even frozen for 200 miles during two months at least.—*Gerard, p.* 27. Andthe people proceeding between these places, (Buseher and Chuprung,) in the cold season, travel upon the Sutlej, which is entirely frozen for two months at least.—*Ditto, p.* 146.

The surface of every small stream is frozen over during the winter, or rather frozen spray forms an irregular archway, beneath which there is a stream. The streams are never arrested so far as I have observed, nor is it probable they should be. The surface of the Sutlej is, I am sure, never continuously frozen; its edges are, and form the road alluded to by Gerard; and its whole breadth is frozen here and there where the water is comparatively still. The Sutlej is either too rapid to admit of surface ice, or too broad to allow the spray to form an arch over its stream.

Rapidity of Rivers, Theory of.—The rapidity of the large rivers, such as the Sutlej and the Para, cannot be expected to increase like that of the Teedong and Taglakhar, since the country through which they flow is not of so rugged a nature.—*Gerard, p.* 97, *Note.*

The ruggedness can scarcely bear on this point. The truth seems to be, that all the streams in question have their origin at nearly the same height, but the large ones have long, and the small ones have short courses, in which to find the same level. Thus the Taglakhar and Darbung torrents rise in the neighbourhood of Passes 18,000 feet high, as high perhaps as the remoter sources of the Pitti river, and yet they have to find the level of that river continued in the Sutlej. This sample of equal descent in unequal distances, seems generally applicable.

Former Lakes.—The people have a vague tradition that this valley (of the Buspa,) was once a sheet of water.—*Gerard, p.* 18.

There can be no reasonable doubt of the former existence of a series of lakes along the present courses of the Sutlej and its principal feeders in the hills. The Sutlej has now indeed attained an equilibrium, and forms one continued rapid from its source to the plains; but the traces of sheets of standing water are everywhere apparent, in parallel and horizontal deposits of pebbles, earth, and debris generally, which a narrow gorge, or a cleft at one end of these deposits, shew where the obstruction existed. These lakes gradually diminished in size until the lowermost barrier was burst or worn through by the continued action of water, and the bottom of these old pools now form the richest and almost the only cultivated lands in the northern hills. In these hills, the natural disintegration of the rocks scarcely anywhere affords a stratum of soil; and although I have in some places, near the flat tops of hills, fonnd two feet or more of vegetable earth, yet as no stream of water can be brought to bear on it, this fine mould is useless to the people generally; some of the more industrious, however, carry a little of it away as a manure to their low-situated fields.

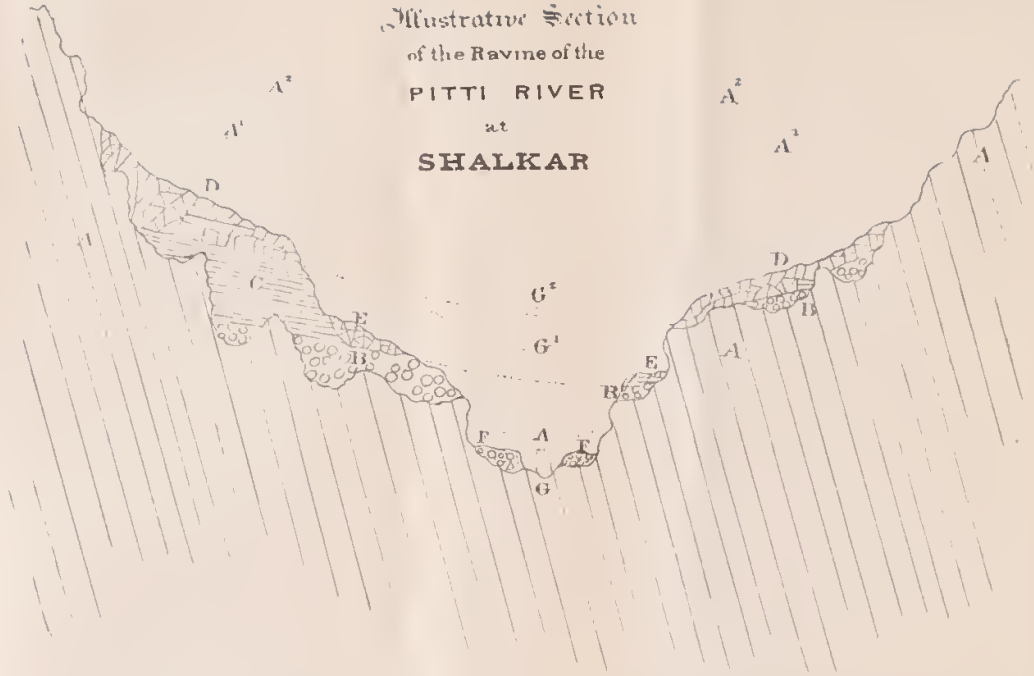
The want of available water is the greatest bar to an extension of cultivation in these cold dry countries, but on this subject, *Gerard, p.* 4, *Note,* and *Moorcroft, Vol. I, p.* 270, may be consulted. Captain Hutton's Tour *(Jour. As. Soc.)* may also be referred to.

The annexed cut will explain the present evidence of the former existence of lakes in the ravine of the Sutlej and its tributaries.

TITLES.

Garpan, &c.—The *garpan* of Gardokh.—*Moorcroft, II,* 251.

Illustrative Section
of the Ravine of the
PITTI RIVER
at
SHALKAR



A A A [illegible] movements

A²G A [illegible] A

A²G A [illegible] section

G [illegible] channel [illegible]

A G [illegible]

B [illegible] rounded stones but [illegible] irregular fragments [illegible] into the [illegible] suspension [illegible] the [illegible] movements [illegible]

C [illegible]

D Debris [illegible] from the high [illegible] of the hills from [illegible]

E The talus of D

F The remains of the same original talus as B modified in arrangements by the fluctuation of the channel above A in the [illegible] of the river to G

Note at Shalkar the height of the uppermost above the lowest G [illegible] feet

From Lhassa two officers, natives of the country, are sent to Gardokh as *garpans.*—*Moorcroft, II,* 365. The subordinate management of the districts is entrusted to two officers, called the *deba* and *vazir.*—*Moorcroft, II,* 365. And two *amhans* sent from Pekin, now permanently resident at Lhassa, and engross the political administration of the state.—*Moorcroft, p.* 364-5.

The Chinese Tartars have officers of various designations: 1st, *umba,* superior to the rest; there are several at Yarkand and Lassa; 2d, *garpan,* military commander, of whom there are two at Garoo; 3d, *deva,* governor of a town; 4th, *zougpun,* governor of a fort; 5th, *poupon,* in charge of a district; 6th, *lassa,* chief of one or more villages.—*Gerard's Kunawar, p.* 145. A *garpun* or governor stays here (Speetee) on the part of, &c.—*Ditto,* 147.

The *zougspun* of Rodokh.—*Moorcroft, II, p.* 436. Their governor, the *goba* of Mirak.—*Moorcroft, p.* 437. I applied therefore for assistance to the *karphan*—*Moorcroft, p.* 448. The chief man or *garpan.*—*Moorcroft, II. p.* 16. The *karpun* or local governor.—*Moorcroft, II,* 42.

Garpan means the "holder" or "doer" of Garo. *Pan* is exactly equivalent to the Persian *dar,* and the governors of Garo only are called *garpans.* The term does not mean *any* governor, as is implied in some of the above quotations.

The *garpans* as mentioned by Mr. Traill, *As. Res. XVII,* 46, are also called *urgu-ma* and *urgu-la,* which I understand to mean the persons right and left of the great one; *i. e.* the honored and confidential servants of the Raja or Emperor. The words would be more correctly written *uku-ma* and *uku-la. Ku* is the Bhotee for image; *la* is given as right and *ma* as left, while *u* is considered as equivalent to, on the head of.

Pan as equivalent to *dar* in Persian enters into other words, as *zungpan,* equal to *killada. Zung* being fort in Chinese, or in the Tibetan of Lassa; also *karrpan* has the same meaning, *karr* being fort in Tibetan, as *dankarr* in Pitti, *shalkarr* in Upper Kunawar, *taklakarr* near the Mansarawar lake.

There are two *ambans* (the *n* is scarcely sounded) in Lassa. They are usually relieved every three years. They are nominally the commandants of the guard of honor of the Gheawang Rinbotcheh, com-

posed of Chinese or Mantchu soldiers; but they are really the deputies of the Emperor, although orders do not run in their names.

Deba or *deva* is a rank only, and the possessor may or may not be the governor of a town or district. It is I suspect a term applied by the people of India only.

Paupon, or as I have heard it *paupo,* appears to be applied to the manager of one district only about Garo; viz. that of Chumurti.

Lassa is the deputy of the head-man of a village. The head-man is called *goba* or *gatpo,* but the signification of *goba* appears to be extended occasionally, and the head-man of the Rupshu district of Ladakh is called *goba.*

The *karpaun, Moorcroft, vol. I, p.* 448; *garpun, vol. II, p.* 16; and *kapun, vol. II, p.* 42, appears to mean *karrpan* or *killadar,* as above explained.

The *zungpani* are placed over large districts, the *karpan* over small. The different designations however of petty local authorities seem to be very numerous.

I may here add, what I have heard of the different authorities at Lassa, as my information somewhat differs from that given by Hamilton in his Gazetteer, almost the only book my position has allowed me to refer to.

Under the Gheawang Rinbotcheh, comes the *Bhot ghelpo* or Raja, or King of Bhot. He is usually an incarnation, but if any delay takes place in the spirit of the deceased finding a habitation, the Gheawang Rinbotcheh selects a person from one of the four great monasteries. Whether he is deposed on the re-appearance of the divinity in a human form, I cannot say.

Under the *ghelpo* are four *kolons* or *sawangs, i. e.* vazirs. These four men form the executive government of the country.

Under the *kolons* or *sawangs,* are eight *dappans* or military commanders.

There are six *changzuds* or treasurers.

The subdivisions of the country are managed by *zungpans* over the large, and *karrpans* over the smaller.

Nuna.—One of whom was the *nuna* or deputy *khalun, Moorcroft, I,* 248. The business of the government is administered by the *khalun* or prime minister, assisted by the *nuna khalun* or deputy.—*Moorcroft, II,* 334.

Nuna or *nonu* does not mean deputy, but is simply a title of respect, and as such, is applied very generally.

Banka, Narpa.—The *banka* or master of the horse. The magistracy is discharged by officers called *narpas.*—*Moorcroft, I,* 334-5.

Banka is a village and not a rank; but at the time of Moorcroft's visit, the *banka-ha* or *wala,* or *naster* of Banka, was the master of the horse in Ladakh. This *bankaha's* name was *tanzin,* with the respectful prefix *nonu.*

Narpa or *nirrpa* is rather I think a sort of treasurer or steward than a magistrate. I would say that *karrpan* or *zungpa,* that is, *killahdar,* is the proper equivalent of thanahdar or magistrate.

Khaga, Tanzin.—And the *khaga tanzin.*—*Moorcroft, II,* 230. The administration is entrusted to inferior *khaluns, tanzins,* or Rajas. —*Do. I,* 335. And he with *khaga khan.*—*Do. II,* 60.

Khaga or *gaga* is a title of respect. The Tibetans also call the chief of the Kalmuks *gaga,* and it may have some connection with the *chagan* of the Avars, for all are no doubt modifications of the terms *khakan.* In Ladakh, &c. *khaga* or *gaga* is a title very commonly bestowed.

Tanzin, at *p.* 335, *vol. I,* is given as the name of an office, but at *p.* 230, 408, &c. it appears rather as a proper name. It is indeed in common use as a proper name, and although Hamilton in his Gazetteer, Art. "Tibet," applies it to an appointment or station, and gives its meaning as equal to a great man, yet after some enquiry I could not hear of the word being applied to an office, either in Lassa or in Laudakh. "*Yin*" indeed may be *tchin, i. e.* "great," and *tan,* means a subject (ryot) or rather a personal dependent.

Bridges.

The different sorts of (bridges) are first *sango,* or wooden bridge, of which there is a print given by Captain Turner; 2nd, the *jhoola,* or rope bridge; 3rd, *suzum* is formed of twigs very indifferently twisted; 4th, *chukhzum* or chain bridge. There is one over the Sutlej under Tholing. The above are used over large rivers.—*Gerard, p.* 33-35.

1st. *Sango* is not the Kunawaree or Bhotee term for a wooden bridge. It is used in the Southern Himalayas for I think any permanent bridge, and it is derived I presume from a Sanscrit word of simi-

lar import. A bridge of the kind alluded to, is called in Kunawaree and in Bhotee, *jampa* or *jambah.*

2nd. *Jhoola* is not a Kunawaree term, and the sort of bridge is not known or used in the Bhotee district in question. The Kunawaree term is *torang.*

3rd. *Sazam* or *chazam,* is the Bhotee term for a bridge of twisted twigs. In Kunawaree such a bridge is called *tran.*

4*th.* *Chakzam* means, as Captain Gerard remarks, iron bridge, but although I never saw the particular bridge alluded to by him, I have every reason to suppose it is an ordinary wooden one with an iron hand-rail. It is, however, familiarly called the iron bridge.

Customs.

Ears of Grain suspended, &c.—The top of which (pillars of wood) is in the houses of the peasantry encircled by a band of straw and ears of wheat. It is the custom, I was told, to consecrate the two or three first handsful of the last year's crop to a spirit which presides over agriculture, and these bands are thus deposited.—*Moorcroft, II,* 317-18.

The Tartar husbandmen have a custom similar to those of some of the Scotch farmers who, &c. &c. The Tartars use three ears of barley, which they paste outside over the door.—*Gerard, p.* 98.

This superstition apparently takes various forms along the lower course of the Pitti. I could not hear of the exact custom mentioned by Gerard as prevailing at Nissang on the Sutlej ; nor could I hear of that mentioned by Moorcroft. I saw, however, in temples, bunches of ears of barley, (always an odd number in each bunch,) hung up before images, and I understood that in Pitti itself, bunches were similarly hung up in the houses.

Presentation of Silk Scarfs.—This person who was styled *Lafa,* visited me twice, and we exchanged scarfs, which is an invariable custom.—*Gerard, p.* 104.

Lafa is the title in Tibet of the deputy of the head-man of the village, and he is a very small functionary indeed; but Captain Gerard seems to have seen things in these countries through an illusive medium. Elegant houses, magnificent temples, and honest men !

Equals exchange scarfs or smaller pieces of silk; inferiors *present* them as they approach; and superiors *bestow* them when they dismiss. See also *Captain Turner*, 72, 233, and *Captain Hutton's Tour*, III, 17, Journal of the Asiatic Society. A scarf (or *kattak* in Bhotee) is invariably sent with a letter, and under the same cover with it.

Prefixing the s in Bhotee and Kunawaree —The principal pergunnas or divisions are and Spitti or Pitti.—*Moorcroft, I*, 315.

The male (ibex) is called *skin*, and the female *l'danmo.*—*Moorcroft, I*, 311.

The Tartars often add *k*, for instance, *ropa* is called by them *ropak*, and they have a way of prefixing *s* to some words as *pooee, spooee ; peetee, speetee ;* and *tango, stango.*—*Gerard, p.* 99, *Note.*

The pronunciation of the Tibetan language admits of a slightly hissing or aspirated commencement to many words, but I would say that the custom of prefixing a clear and distinct *s* is prevalent rather about Rampur on the Sutlej than in Tibet. The habit has, however, been largely followed by our travellers through Kunawar, as they are generally accompanied by some people of the Bíssehir Rajas, who by long residence about Rampur, (if they are not natives of that quarter,) have adopted the custom. Pitti and not Spitti, is the correct term, as is likewise *kin* (or *kin*) and not *skin*. But although I could not ascertain that the prefixing of the *s* is a custom in the Bhotee districts adjacent to Upper Kunawar, it may obtain in other parts of Tibet, as Moorcroft and also Mr. Vigne, write *skin* for *kin*. The former moreover uses *zongspun* instead of *zungpan*, a *killahdar*, (II, 436,) and says Pitti is called Spitti. In the writings of respectable people, I always found Pitti.

The custom mentioned by Gerard of adding a *k* is occasional, I think, rather than general, and the addition is rather an aspirated *h* than a full *k;* such irregularities or uncertainties of pronunciation are common among illiterate people, and in trying to ascertain the true pronunciation of words, I have been perplexed by the different ways in which the same person often pronounced the same word.

The village Pooee or Spooee, quoted by Gerard as a proof of the prefixing of the *s* being a custom of the Bhotee, is an unfortunate instance; the Bhotees, *i. e.* the inhabitants, call their village *pura*, or *puba*, the Kunawarees and others lower down *pueh* and *spueh*.

Captain T. Hutton's Tour.—I have more than once referred to Captain Hutton's Tour in Kunawar, performed under the auspices of the Asiatic Society; and while I am about to conclude this paper by correcting or modifying some of his statements, I must in the first instance bear witness to the general accuracy of the impressions he conveys.

Rampur.—Rampur is a considerable *entrepôt* as well as a *manufacturing* town, *vol.* I, *p.* 4, as is also evident from what is subsequently said of the fair, *p.* 5. Among the Tibet exports to Rampur, *p.* 5, Charas should have a permanent place, instead of being omitted or included in an et cetera.

Raja of Bissehir, &c.—The Rajah of Bissehir *has* a legitimate son, as well as an illegitimate one, *vol.* II, *p.* 6; he has also *four* chief vizeers instead of *three*, the fourth being a Kunawaree placed over the Tartar district, and now changed from time to time. The only inferior officer called vizeer by courtesy, may be the person placed over Rampur.

Charias.—The *charias*, *vol.* I, *p.* 6, were originally chosen from the wealthiest families, but several have now fallen to decay. There are, that is, ought to be, upwards of 80 of them, as 50 are required from Kunawar Proper, and about 40 from Dassow. In Kunawar the revenue is fixed, and in that district the assessment *cannot* therefore depend on the report of a *charia*.

Revenues—British Tribute.—All houses which pay revenue supply a *hazri*, *vol. I*, *p.* 7, same as those which furnish a *charia* each. They muster about 300 in all.

In Kunawar, no house pays I think less than 8 annas on account of the British tribute, *vol. I*, *p.* 7, and none more than 9 rupees. The vizeers pay nine, and these are the limits instead of twelve rupees for vizeers, and from ten rupees to four annas for other people, as Captain Hutton was informed. I may here mention, that the Raja when we imposed a tribute on him, did not lessen his own expences in order to meet it, but levied an additional tax on his subjects for the purpose. Our rule is therefore felt as a grievance by the people, and not by the Raja.

Captain Hutton says, the whole revenues of Bissehir may be estimated at 50 or 55,000 annually. In 1817, they were estimated at

67,000, and that *quasi* official authority, the " Bengal and Agra Gazetteer" for 1841, gives them at 1,40,000.

No wool or *neozas* are levied as revenue, *vol. I, p.* 7, neither are raisins demanded, but the lands attached to forts supply the wants of the Raja. In stating this, I do not mean that the Raja does not make his people supply him with fruits, but merely that the taxes, proper and understood, do not include them.

Punishment.—For crimes and misdemeanours, people are hanged, mutilated and imprisoned, *as well as* fined, *vol. I, p.* 7-8.

Sarahan.—Sarahan, *vol. I, p.* 10, is *not* in Kunawar, but in Dassow. The boundary of the two districts is the Murad Ghat, *above* Sarahan.

The Juniper.—The juniper, *vol. I, p.* 29, is called *lewr* about Rampur, *shur* in Kunawar, and *shukpa* in Bhot; and *not lewr* and *shur* in the last named districts respectively.

The Gigantic Chakor.—The gigantic chakor, *vol. I, p.* 37, is *not* called *bheir* in Kunawaree. It is so called about Rampur. In Lower Kunawar, it is called *lipaia;* in Upper Kunawar, *kuleh;* and in Bhotee, *gungmo* or *komo.*

Apricots.—Leeo is *not* the last village towards Pitti where apricots occur, *vol. I, p.* 41. At Shalkar there are abundance of fair apricots, and also some trees at Sumra, twenty miles above Lio; but there the fruit scarcely comes to maturity.

Changgo, declining.—The picture of Changgo, *vol. I, p.* 41, is overdrawn. There are now 121 souls in it, that is, 21 *more* than when Captain Hutton said it was so populous. Its decline is *not* continuous, but may have been *temporary, i. e.* some poor families may have gone away for a season or two. It now produces *more* than its people eat. A rotation of crops *is* practised in Changgo, and the inhabitants *have* a very fair proportion of cattle, which they graze towards their outvillage of Changrezing. The fields of bare and hardened sand are still occasionally cultivated, but one crop exhausts them, or their produce is weakly, and of no value.

The Para.—The Para river, *vol. I, p.* 45, does *not* in all probability come from the Chumorenil lake, see *As. Res. XVIII, Pt. II.* 259, and *Moorcroft, II,* 52.

Frost Rivers.—The severity of *frost* can scarcely affect the supply of water to a river, as Capt. Hutton supposes with reference to the Pitti,

vol. II, p. 47, unless indeed a spring or a stream be dispersed over a flat surface, and turned into ice; but I have never seen any stream so arrested, and I have seen many small ones flowing when the thermometer was below zero. A comparison between the Pitti and Sutlej is not easily made, but where Captain Hutton saw the two rivers, the Pitti was the broader, and therefore the larger *looking;* but I think that during the winter, the Sutlej is really the larger. Dr. Gerard must, I suppose, be quoted with reference to the Sutlej in the lower hills, where he says its least breadth is 211 feet. Captain Gerard (*Account of Kunawar, p.* 26,) gives the breadth at Namptu, a little below the junction of the Pitti as 106 feet, and at Wangto as 92 only. Near Dubling, the united streams rush between rocks scarcely twenty feet apart.

I do not agree with Captain Hutton, in what he says, *vol. II, pp.* 2-3, regarding the rise of the rivers of the plains in June, &c. or their fall in January. The melting of snow is a slow operation, but the descent of rain is rapid, and the streams so formed, soon reach the larger rivers and swell their volumes. I am clearly of opinion, that four-fifths of the water in the Sutlej, when in *full* flood, is the produce of rain, and not of snow; and that no severe frosts in any Himalayan regions could in the month of January affect the river Indus in Sindh; but while snow fell on the tops of hills and was slowly melted, rain fell on their sides and in the valleys, and was quickly carried into the main streams.

Shawl-wool Goats.—The shawl-wool goats are *not often* four or five horned, *vol. II, p.* 4, but occasionally so only, as a man is *sometimes* found with six fingers.

Lamas.—There may not be any really good Lamas in Hangrang or Pitti, as Captain Hutton says, *vol. II, p.* 23, although I presume his informants simply meant, none of eminence or sufficiently versed in their scriptures; but it is *not* the custom to make any wealthy family man a priest, and marriage *is* allowed to certain sects of Lamas.

Pargyul Mountain.—I could not learn that Pargyul meant conical, *vol. II. p.* 24, but connected with this high and holy hill there is a saying, that goats whose horns meet at top, salaam or make obeisance to it. This story and the joining of his informant's hands in imitation of the goat's horns, may have been in Captain Hutton's head when he wrote.

Ripening of Crops.—The crops of Changgo and Lio are usually ready for the sickle in all July, *vol. II, p.* 25; but those of Hanggo certainly are *not* until a month or six weeks afterwards, see also *vol. III, p.* 19. The crops of Hanggo were green in 1842, while those of Sungeram and &c. were being cut. Captain Gerard, *p.* 66, leads I think to a wrong inference regarding Namghea and Shipkeh. He says, that in August the crops of Namghea (9,300 feet) were green, while those of Shipkeh, 1,400 feet higher, were being cut. Captain Gerard perhaps found the second crop at Namghea well advanced, as on the 15th July 1842, the first crop was nearly all cut.

Bhotees Bathing.—Captain Hutton was fortunate in seeing what I never beheld; viz. Bhotees bathing, *vol. III, p.* 6; that he saw them, I know, as he has himself told me so, but this was the exception to the rule, and they themselves confess, that it is not *their* custom to bathe, and that their more respectable people only put on new clothes when their old ones are much worn and very dirty.

The Snow Fish.—Captain Hutton somewhere mentions the snow fish, but I cannot at present refer to what he says regarding it. It is called *ganghal* in Bhotee and Kunawaree; it is said to live at the lower limits of the snow only; to be seldom if ever found alive (a slip of snow occasionally carries one down with it); and so far as the people know, one only has been found in Kunawar.

They say it has a face resembling that of a man, four legs, and no marked tail, (as a lizard has.) Its flesh is considered efficacious in certain diseases, and such as are found, are usually taken to the holiest Lamas, who distribute pieces of it as specifics. The skin is said to be used for some ornamental purposes.

ADDENDA.

Hassan Abdal, the Indus at Attock.—Before leaving Moorcroft's valuable book, I will go somewhat further than I at first intended, and point out the errors into which he, and even Elphinstone, whose volumes I always take up with respect, have fallen regarding two places well known to those who have crossed the Punjab. *Moorcroft, II,* 319, and *Elphinstone, II,* 99, say, that the tomb of Baba Wali is in a square enclosure at the foot of the hill which rises above Hassan Abdal. The tomb of the saint is on the top of the hill, and not at the

bottom; it is kept in repair, and owing to its white color, forms a conspicuous object at a distance. The tomb below is I believe that of a lady of rank, but there is no inscription. It is, allowed to fall to decay.

Elphinstone was probably unacquainted with the legend which Moorcroft gives. He does not relate it, and this increases the reasonableness of a modification of Moorcroft's suspicion; viz. that the story is of recent Sikh adoption, and that the stone bearing the impress of a hand, has been lately produced to satisfy the superstition of believers.

There is a Mahometan legend, that Abdal the fakir came to the place and asked Hassan, the cowherd, for a draught of milk; Hassan said he would gladly give him one, but that his cows were dry. The fakir pleased with the disposition of Hassan, placed his hands on one of the cows, and desired him to milk the animal; he did so, and gave Abdal a good draught. Abdal then asked the cowherd what he would chose as his reward, Hassan said they were much straitened for water in his neighbourhood, and that a supply of that necessary element would be valuable to himself and to others. The saint struck the hills where he had been refreshed, and also at Wah-wah, and water gushed forth.

This legend may have existed before the rise of the Sikhs as a sect; but as they extended their power, they desired to increase the fame of their apostle. They found a miracle to appropriate, and they did so at the expense of the Mahometans, their predecessors. The saint of the new faith performs the *old* miracle, and shews to his rival the superiority of his power.

The *granth* or shrines of the Sikh scriptures was established at Hassan Abdal about 1813. I do not agree with Moorcroft in his *reasons* for his suspicions about the legend. He says, a few years only have elapsed since the place was in the possession of the Affghans, whose fierce Mahometanism would have tolerated no Sikh pilgrims or shrines within their boundary. In Affghanistan itself, there are places visited by the Hindoos; the fierce spirit of the Mohametans shews itself upon rare occasions only; and in populous tracts, the Mussulmans everywhere admit, and sometimes participate in, the superstitions of the vulgar. As an instance, I may quote the Ziarat at Jellalabad, which is visited by both Hindoos and Mahometans, and also the Hindoo temple of that town, said to produce 40,000 rupees annually, (*see Journal of the Asiatic Society of Bengal, CXXII*, 128.)

At *p.* 325, *vol. II,* Moorcroft says, " On the right bank (of the Attock,) at the place where it turns, is the rock of Jelalia, and opposite to it that of Kamalia, between which is said to be a dangerous whirlpool."

Elphinstone, II, 96, says, " In the midst are the famous rocks Jelalia and Kamalia, but the whirlpool of which we had heard so much, did not rage at the season when we passed." These rocks are not in the middle of the river as stated by Elphinstone, nor on opposite sides as mentioned by Moorcroft; but both are in the right bank; nor, excepting in a sort of bay, could a whirlpool be formed in a narrow and rapid river. The *danger* consists in crossing the stream when flooded, for to be dashed against the projecting rocks would be certain destruction, and the *object* is to direct the boat free of the upper rock, and into the bay above the lower one, so as to effect a landing where the water is comparatively quiet, that is, just below and under shelter of Kamalia. There is no whirlpool properly so called, that is, the rocks and rapid stream are to be feared, and not the ingulping powers of the eddy.

Report on the Agricultural and Land produce of Shoa. By Captain Graham, *Bengal N. I. of the Mission to Abyssinia.*

" Natura beatis
Omnibus esse dedit, si quis cognoveret uti."

1. The different modes of tilling the ground practised among the various nations of the earth, are well worthy of observation and remark, as the progress of agriculture exhibits the progress of the population in comfort and civilization, and thus forms one of the most important chapters in the history of national manners; and indeed the tracing its gradations through the various customs of different people, from the first glimmering bestowed upon the located savage, to the full development of the science of husbandry in the most civilized society, is a curious as well as a profitable task, for its present state may be taken as a tolerable criterion, whereby to judge of the relative position which the people hold in the scale of nations.

2. In a populous country where there are no wild animals to fill up the deficiency, and but few spontaneous fruits to mitigate the pangs of hunger; and where the search for wild roots would prove but an unprofitable labour, the pursuit of agriculture must necessarily be deemed of high importance, and carried to that point which places the nation in a state of comparative plenty; but there is a wide gap to be filled up between this period and the time when those causes are developed, which render agriculture purely commercial, and Abyssinia remains at present in this lethargic position.

3. Still she has emerged considerably from that state of society which is denominated barbarian, and elevated far above the hunting or savage, by the power of taming and subjecting the lower animals, and by practising a species of agriculture, to which the fertility of the soil has hitherto granted an abundant return. The extent of cultivation also is very considerable throughout the kingdom, and this important branch of industry has progressed far beyond any art hitherto discovered amongst the nations on the western coast.

4. Private property in the land is everywhere sanctioned, allowed and established; there are few forests or wastes, excepting those impracticable for pasture or cultivation. Farm-steadings and individual dwelling houses embellish the aspect of the landscape, reposing secure from predatory bands, or hostile neighbours; and although a great part of the population is collected in towns and large villages, yet the country is also abundantly inhabited. The processes of preparing the ground are somewhat complex; the plough is in use to the exclusion of the African hoe, and considerable industry is evinced in collecting and distributing the waters in artificial irrigation. The grains which on the other coast are coarse and small, rather like seeds than grain, and fitted less for bread than pottage, are here of a large and full pickle, and in every variety. The people are possessed of a written language, and the king of the country inhabits stone houses, which rise two stories above his fortifications.

5. Unburdened by an over-population, and possessed of a fertile soil and favourable seasons, in the absence of all luxuries a sufficient abundance is produced for the mere maintenance of life. Yet still the science of husbandry is little understood, the implements of culture are few, and of the rudest construction; the various methods of assist-

ing nature are entirely unknown, the capabilities of the country are not taken due advantage of, and unless some European power interferes for good with the strong hand, a great length of time must inevitably elapse before the habits and prejudices of this uncivilized nation be overcome for its own benefit.

6. The climate of the Abyssinian mountains and table land is altogether favorable for cultivation; here there is no winter,

> "Such as when birds die
> In the deep forests, and the fishes lie
> Stiffened in the translucent ice."

Neither does the sun blaze in malignant light on the head of the husbandman, nor do burning blasts unseasonably wither the crops; but the coolness of the mountain breeze is pleasant and refreshing, and the timely cessation of the rain allows a healthful rest to vegetation, while its periodical return, soon produces the usual displays of young shoots and budding flowers.

7. The seasons are regular, and the atmospheric changes so distinctly marked, that the inhabitants are enabled to calculate when the rains will commence and when they will cease, and are thus fully acquainted with the amount of labour to be performed, before the arrival of the stated period. The rain of "bounty," and the rain of "covenant," are each in their turn taken advantage of by the husbandman, and immediately after these down-pourings, nature who had remained bound up in the rigidity of the preceding drought, bursts forth into a thousand interesting forms; the pastures and meadows are clothed in cheering green, the hills and dales adorned with myriads of beautiful flowers, and the sides of the mountains appear one sheet of the most luxuriant cultivation.

8. The soil is fertile, and without artificial manures or any great expenditure of bodily fatigue and exertion produces a plentiful supply of food for man and beast; but notwithstanding all these local advantages the ignorant Abyssinian has hardly emerged from the first rudiments of the art of husbandry, and although nature has been so prodigal, the prejudiced inhabitant has taken little thought to benefit his condition by a proper use of her gifts and favours.

9. Every thing in the climate of Africa is in extremes, but barrenness and fertility of soil border upon each other with a degree of

suddenness, of which the inhabitants of temperate climes can form little conception. Passing in an instant from the burning plains of the Adaiel to a rich landscape in which flocks and towns and villages abound, the strange sight is afforded of regularly marked fields, mounting in terraces from the very base of the Abyssinian mountains, throughout a steep ascent of five thousand feet which leads the traveller to an unlimited table land, where the eye is perfectly satiated with the endless succession of waving crop and rich green meadow.

10. And although the soil on the mountain side requires artificial support to preserve the earth from being washed away, and in many places reposes in an angle where it seems hardly possible for the plough to pass, yet wheat and barley delight in a dry stony ground, and with a fair proportion of the "former" and the "latter" rains, will yield an abundant return to those who feel their industry called forth, to emulate the prosperity of their more happily located neighbours.

11. Situated in the middle of the torrid zone, and surrounded by trackless regions, or by tribes whose cruelty and bigotry are more dangerous to the intruder than the poisonous blast and the burning desert, secluded Abyssinia has remained almost a sealed book to the arts and sciences of the civilized world; and composed of groups and ranges of very high mountains overlooking wide plains and deep vallies, and being under the complete influence of the tropical rains, the difference of the climate in her relative parts is of the most varied description.

12. The high table land which is clothed with moderate vegetation, destitute of wood and freely ventilated, is at all times cool and healthy, and often extremely cold; whilst the low wooded vallies are close, unwholesome, and insufferably hot. During the cold season the thermometer on the summit of the range stands about 30°, and a thin coating of ice covers the pools, and the country appears white under a mantle of hoar and frost; whilst in the vallies, the quicksilver mounts to 90°, and the total absence of breeze renders the heat still further oppressive. At the termination of the rains, fever with all her attendant horrors spreads her pestilential wing over those beautiful locations, and during the month of September, even the wild birds forsake for a time the poisoned atmosphere, and betake themselves to the more genial climate of the upper regions.

13. The amazing fertility of these vales is beyond all conception, every species of crop attaining the most gigantic proportions; the rich soil, and the nurturing shelter, the abundant supply of water, and the ardent rays of the sun, all combining to crown the hopes of the husbandman; and these situations would have stood prominent as perfect in the creation, had nature blessed them with a climate corresponding in character to their lovely appearance.

"But putrefaction into life ferments, and breeds destructive myriads," and like the apples of the Asphaltus, the inviting beauty of the exterior forms but a gossamer covering to the seeds of death which lurk within.

14. On the sides of the mountains, the vegetation seems to be somewhat inferior in luxuriance, and may be accounted for from the reason, that the angle at which the sun's rays strike the ground, and consequently their power of imparting caloric, varies with the exposure of the soil relatively to the luminary. The eastern face of the mountains rising almost perpendicularly, can only for half the day receive the rays running even parallel to its surface, their effect must therefore be trifling, and for many hours in the warmest part of the afternoon, the surface is entirely obscured in shadow.

15. The aspect of the country is as varied as the climate. On the elevated plateau, a succession of gentle undulations of pasture and arable lands, intersected by green swampy meadows with bare banked rills streaming through the centre, rise in endless continuation to the view; not a tree disturbs the wide prospect, although the individual farm-steadings proclaim a country which has long enjoyed the blessings of peace. The craggy mountains rise in the centre in magnificent ranges, and are divided by a thousand chasms, in whose depths run clear gushing water, and tangled bushes and evergreen shrubs diversify the cliffs, many of which are covered with magnificent woods. In every nook and coigne of vantage, are to be seen and scented the eglantine and the jessamine, and an inexhaustible store of sweet-smelling flowers; the strips of intervening slope, the most desirable sites for residence, are clothed in luxuriant crop and herbage, fed by the oozing streams of the mountain; and the rich and smiling vallies repose at the foot of the range, hid in all the exuberance of foliage from the gigantic ficus, whose stem is upwards of forty feet in

circumference, to the light elegant acacias which distil the much-prized gum.

16. The absolute necessity of taking due advantage of the appointed season of rain, rather than any fixed purpose of economizing time and labour, enforces some faint attempts at arrangement and division of employment for the various months; seed-time and harvest, however, form the two great periods of exertion, and there are but few other agricultural operations to mark the remaining seasons of the year. Whilst not actually employed upon the ground, or when not compelled to attend the king on his military expeditions, the Abyssinian peasant drives a wandering trade throughout the country, disposing of his farm produce, horses, mules, asses, &c., or leads an idle life, without holiday, or much amusement at home.

17. The following table will serve as a register of work and weather in general accordance with Abyssinian custom and observance:—

1841.

Teok.—January.

Fine cold dry weather, sow barley for the February rain, make heaps of top parings, burn and plough in the ashes, gather in the September crop of cotton. Great Military expedition.

Yekkateet.—February.

Rain of "bounty" from the 5th to 2d March; sow barley, peas, beans, grain and wheat.

Mugabeet.—March.

Fine weather from the 2d to 16th, heavy rain on the 17th, 23d, 24th and 25th; sow barley and red wheat.

Maazia.—April.

Light shower during the month; 23d, two slight shocks of earthquake; sow cotton; gather in September crop of cotton.

Ginebate.—May.

Wind N. E. very strong and cold, rain towards the end of the month; sow juwaree and other grains in the valley.

Sunnee.—June.

Occasional heavy storms of rain, hail and wind till the 25th, when the rain of "covenant" regularly sets in. Gather the January crops of barley, &c.; sow teff, barley, wheat, juwaree, peas and beans; shear sheep, extract honey from the hives. Military expedition.

Amlee.—July.

Heavy rain and fog, sun seldom seen, weed crops, and make trenches in the fields, plant tobacco, goomun, gourds, chillies, onions and oil plant.

Naasie.—August.

Heavy rain and fog, chiefly at night, with occasional sunshine during the day ; weed crops.

Muscaram.—September.

Heavy rain till the 15th, plough, sow cotton. Grand annual review of Troops.

Tecumpt.—October.

Clear, cold weather with piercing wind from E., hoar frost during the nights, cut grass for winter hay. Commence gathering in the early June crops. Commence ploughing. Great Military expedition.

Hedar.—November.

Heavy rain on the 12th, gather in remains of July crops, also the April cotton crop. Shear sheep, continue ploughing, extract honey from the hives.

Tessas.—December.

A dry cold month with strong easterly winds, a slight covering of ice appearing on the pools, continue ploughing for February rains.

18. There does not exist any land measurement in the country, nor any returns whatever of produce or population ; but from a careful observation during many journeys in every direction, I have calculated that one-fifth of the whole surface of Shoa may be fairly considered to be under cultivation, whilst two-fifths are preserved as good meadow land, and the remaining two-fifths may be stated to be very indifferent soil, forest or impracticable rock.

19. The Christian population of Shoa and its dependencies, has in a former despatch been roughly estimated at a million of souls, and the Moslem and Galla tributaries at a million and a half. As this population derives its entire subsistence from the produce of the soil, even allowing two (2) pounds of grain per diem to each individual, (and any Abyssinian will devour double the quantity,) the amount annually consumed, would be 1,825,000,000 lbs., and giving one-fourth more for beasts of labour and burden, the amount would be 2,281,250,000 lbs. In countries where the art of husbandry has

made the highest advances, six (6) pounds of grain is reckoned a high weight of crop per ninety-nine (99) square feet, and granting to the imperfect cultivation of Abyssinia one-half of this produce, the extent of ground required to realize the above amount of grain would be 2,700 square miles, and as calculating that the Shoan population is scattered over an area of about 159 miles in length by about 90 in breadth, it would appear from this rough calculation, as well as from actual observation, that about one-fifth of the country is under the plough. The surplus of product annually imported into the country of the Adaiel and elsewhere, together with the seed corn, will be sufficiently accounted for, by the produce of the supplementary harvest, which is always taken advantage of by the more industrious farmer.

20. The ground belongs partly to the king, partly to the temporary resident governors of the districts, and partly to the inhabitants themselves. Where there is no previous right existing, a field can be purchased by a private individual on payment to the governor of a regulated present of honey, cloth or pieces of salt, and subject to an annual taxation of produce; but all the more favored spots of the country already appertain to his majesty, whether in pasture or arable land, and the royal magazines for grain and farm produce, are profusely studded over every portion of the kingdom. The price of a field of course varies according to its size and locality, bearing a nominal value in the district from three to twenty-five German crowns; but neither money nor value in kind is ever in the first instance paid down by the purchaser, the present is alone made to the governor of the village as an entrance fee, and the holder is made accountable for rent, according to the will and pleasure of the Government authority. Neither can a man part with his field to any individual without the express consent of the governor, who must be first propitiated by a present, and in the event of compliance, the half of the annual rent is assigned to the original proprietor as the payment of his land.

21. The king's fields are cultivated either by his numerous slaves who receive but a scanty pittance of food for their labour by the voluntary working of the whole district *en masse*, or by free peasants who receive as compensation a portion of rent-free ground for their subsistence and expenses; a third of their labour being demanded by

the king, they are allowed to work two days on their own lots of land, whilst the labour of the third day is appropriated to his majesty's property. The produce of the different allotments, is however quite sufficient for their subsistence, and for the establishment which they are obliged to entertain. The possession of a donkey, a pair of bullocks, a slave, and a woman to grind grain being absolutely indispensable, as all the various offices of farmer and miller, from the preparation of the ground, to the sacking of the flour, are performed by this class. A king's scribe is alone retained in each district, to enter into his books the amount received into the royal magazines under his charge.

22. The governors armed with the omnipotent authority of the despot, each play the autocrat in their own domains, and fashion their habits and privileges after those of their royal master. Their fields are cultivated in the same manner as those of his majesty, with the additional facility of enforcing the oppressed inhabitants to grant, for a very inadequate compensation in grain, many days labour in each of the great agricultural operations of ploughing, sowing, reaping, winnowing, &c. &c.

23. All other persons possessing ground, are obliged to pay a certain fluctuating tribute to the governor, according to the will and option of that great officer of the state, in grain, honey, farm-stock, cloth, or salt pieces; and as his majesty besides taking from his governor as an inauguration fee from four to six hundred crowns, is (unless presents are frequently and voluntarily made) continually sending for cattle, and honey, and sheep, in quantities, these offerings fall hard upon all classes; for should the governor give entirely from his own means, he would find himself soon totally impoverished; and should he tax the people too roughly in the preparation of this gift, complaints would invariably reach the royal ear, which are certain to strip the offender of his government and remaining property.

24. The fields are not measured, but merely divided by means of small ditches and stones, and on the face of the mountains are generally of so diminutive a size, that it has been found necessary to enact an ordinance regarding the accidental falling of seed upon a neighbour's field, and it has been decreed by the king, that such being the will of Providence, no squabbling, nor disturbance shall henceforward take place, but that each shall enjoy in peace what is found in his own

field. Hedges are unknown, except in a few of the greatest thoroughfares to enclose and render more impassable the muddy lanes; and the boundaries in pasture land are simply marked by large stones erected apart at great intervals.

25. In consequence of this want of enslosure animals are continually trespassing among the grain, and the regulations on this point are clearly defined and stricly adhered to. If the stray animal be a horse or a mule, the bridle is the forfeit; if a donkey, a dowla of grain must be paid; and if a goat or sheep, one of the legs being tied up, the animal is carried before the governor, who ascertains the damage, and the proprietor is compelled to pay the exact amount of destruction, called *affelama*, being moreover obliged to swear by the king's life, that the animal shall in future be kept in due restraint.

26. The process of paring and burning is in general practice, without reference to the quantity or quality of the soil, a portion of which by this operation, becomes reduced to ashes. The ashes in some situations, and in the absence of extended means of conveyance, have certainly the effect of acting favorably as a manure, and besides obtaining in some degree the object of fertilizing the soil the process is also advantageous in destroying the weeds and rubbish. This their only attempt to fatten the soil, is mentioned as being in use in the most ancient recorded system of agriculture,

> "Sæpe etiam steriles incendere profuit agros,
> Cotque levem stipulam crepitantitrio urere flammis."

But the system in modern husbandry has been very nearly exploded as erroneous and inefficacious, except in obstinate bog lands. Shovels and spades are unknown in this land, and the heaps are afterwards scattered over the surface of the ground, by the hands of the village urchins, who may be seen scratching and scraping at the earth like dogs, their utter nakedness being but little concealed by the enveloping cloud of red dust.

27. In all the districts of Shoa, a regular system of cropping has been established, and these rotations of crops are scarcely ever departed from, founded on the principle of preserving the soil from becoming utterly impoverished, and depending also upon the qualities and the diversity of the situations; but altogether indicating the very small advancement made by the Abyssinian in the art of agriculture.

28. In the valleys, teff, jewarree, cotton, oil and wheat follow in succession. On the high country, barley and wheat in alternate seasons, and in the cold moors of the table land, the ground is left fallow for one year to recover itself, before a fresh crop be taken from the exhausted material. Every quality of soil, however, is not adapted to the growth of wheat, nor would the crop arrive at maturity in every situation, owing to the bleakness of the elevation and the tempestuous blasts, fogs, and vapours which cover the crest of these high mountains; and in these districts, peas, beans, and barley form the successive crops.

29. On the table land, the best soil is of a rich brown color, which is found on the sheltered sides of the hills, and the loamy alluvial deposit running along the banks of the river. Black soil is rarely met with on this mountains, and may probably be the decomposition of those forests, which tradition gives as once existing in ancient days, but of which now no other vestige remains. Stones are plentifully spread over the surface of the field to break the fall of the heavy rains, and compact walls are built on every slope, to prevent the soil from being carried away by the impetuous rush of the water.

30. In the valleys, and more especially in the governments of Geddem and Geshe, the richest black soil prevails throughout, and with the aid of a plentiful supply of water, and a mild genial climate, the valleys appear one continuous scene of the most luxurious cultivation of all the produce known in Abyssinia. On the mountain sides the soil is light, loose, and gravelly, and well adapted for the growth of coffee and tea; besides granting a fair return of the various grains which are deposited. Manure is difficult of conveyance, without the convenience of wheel carriages, which are entirely unknown in Shoa, and with the exception of the ashes of the top paring, is seldom applied in common cultivation, as it is fully believed that the cattle and sheep, during their daily pasturage, afford a sufficiency of manure for all practical purposes.

31. Artificial irrigation is resorted to in every situation where a supply of water can be obtained without much trouble, and crops of onions, chillies and gourds are grown in patches by the river sides, where the water can be easily diverted from its bed. The king's farms are in general, from their choice localities, well watered and clearly cultivated; the slopes of the hills are admirably adapted for the

dispersion of the numerous rills which trickle down the mountain side. The valleys in the low country are completely intersected with tiny canals, and the extent of ground, which by a judicious opening of artificial trenches, is watered by these small runnels is surprising.

32. But the divisions of the field are neither neatly made, nor carefully kept in order; there is no levelling of the ground, and no raised banks to enclose the smaller plots, in the preservation of which consists the perfection of this system, and in consequence the water flows very irregularly, entirely floating some of the lower parts of the field, whilst the more elevated are left destitute of the requisite moisture.

33. At all convenient spots where the banks are level with the stream, a few rocks are rudely placed in the water, jutting out a few paces from the bank, and by this simple contrivance, a sufficiency of fluid is diverted from the overflowing stream.

The water-course, which in Amharic is denominated "the water ladder," is elaborately built with loose stones and much and carefully supported in difficult places by wooden buttresses. These canals are built and kept in repair by the united efforts of all who desire benefit to their lands; but the tribute paid to the governor being taken according to the value of the ground, the superior location to the middle class is of no advantage whatever, but merely entails a greater portion of labour.

34. A moderately dry season is reckoned the most favorable for a superabundant crop of wheat and barley, but beans and jewarree, cotton, grain and oil require a plentiful rain. A return from the field of twenty-one times the quantity of deposited seed on the high land, and of thirty-four in the valley, is considered a most excellent crop for wheat, barley and all other grains, with the exception of jewarree; whilst a bad season reduces the produce to ten or twelve in the former, and fifteen or twenty in the latter situation.

35. Abyssinia, however, is happy in a most copious supply of water, (the rains descending twice during the year,) in the flooding of all the rivers and streams, and the complete breaking of the entire earth. The "rain of bounty" commences in February and lasts for one month, and the "rain of covenant," commencing in June, pours down with

extreme violence during July, August, and September, thus affording during twelve months an abundant moisture for two harvests, which the succeeding sun soon brings to maturity.

36. The ground according to universal custom, is ploughed at four different times of the season, and when the sky is cloudy and overcast; the seed is committed to the earth, without the ceremony of harrowing, or otherwise pulverizing the large clods; where the steepness of the mountains prevents the use of bullocks, the ground is broken up with the pick-axe by the hand of the husbandman, but the instruments of culture are of an exceedingly primitive fashion, and the impression made upon the hard baked soil, is of a very imperfect and evanescent nature.

37. The oldest forms of the plough of which we have any description in ancient authors, are very simple indeed; a mere wedge with crooked handle to guide it, and a short beam by which it was drawn, forming the component parts of the entire instrument, and the plough now used in Abyssinia seems to differ very slightly from the old model.

38. This machine, called *airsea*, is extremely rude in its construction, and so slight, that a child might carry it in his arms; the share is of wood and slightly armed with a tiny bit of iron, and it has only one handle or shaft for the guiding hand of the driver; with such an instrument, the peasant is under the necessity of bending almost double, and loading it with his own weight, in order to make any impression whatever upon the soil, otherwise it would glide innocuous over the surface.

39. From the imperfect construction of this quaint and primitive plough, a clean furrow cannot be cut up and turned over, a rugged rut being the utmost effect of the rude instrument: the soil can therefore only be broken by frequent crossing and recrossing the field, and it is evident, that however often traversed by a machine of this sort, the wild roots of any tenacity can never be entirely removed, so that this mode of culture must be always very imperfect, and the necessity of working so many crossings a very great waste of labour indeed. It is no uncommon sight to see on the king's or governor's extensive domains, fifty or a hundred ploughs at work together, and as the fields are never divided into ridges, and neither order nor regu-

larity preserved, the feeble scratching is carried on in every direction wherever the animals can find the requisite room to turn.

40. The pick-axe, called "*domah*," is fashioned from the tough wood of the "Lobinsa," having a crooked head inclining at an angle of 45° towards the shaft, which is straight, and from two to three feet in length; the head of the crook is armed with a heavy piece of sharpened iron, which can be fixed either perpendicularly or horizontally, and transformed at pleasure into a hatchet or a hoe.

41. The sickle, called "*maachet*," is short, slightly curved, with the edge indented, or cut into teeth; it is employed in reaping every description of crop, cutting grass and hay, and even at times used for lopping away branches and bushes.

42. The seed is covered in by one of the light scratchy performances of the plough, which for this purpose is driven rapidly over the field, and during the prevalence of the monsoon, the farmer is employed in ploughing trenches through the wheat fields, to carry off the superabundant moisture. The women and children are fully occupied in hoeing the crops, and keeping them clear of weeds; and whilst the grain is ripening on the ground, a basket-work is erected upon a high tripod in every field, and the ingenious youth of the district are posted on these stages with slings and whips to frighten away the birds during the day-time. When the fields in the vallies are situated near the haunts of elephants, the largest trees are selected, and rude ladders bound along the trunks leading to a place of refuge amongst the branches for the labourer, during the inroads made on the crops by the huge monarch of the forest, who in this country is not easily turned by fires and shouting, and whose displeasure at being disturbed at his meals, is generally manifested by the sacrifice of the intruders.

43. On the crop arriving at maturity, a bundle of grain is cut, and fastened up in an elaborate and handsome form. This is called "*animete*," and is presented as a token of joy to the governor, or to some near relation; the reaping thus commences with every available hand on the farm, female as well as male, and the grain is cut high up in the stalk, the half of which is left attached to the root for the use of the cattle, and the remainder with the ear stored

in piles on the field, for the purpose of being thoroughly dried and hardened in the sun.

44. The threshing out of the wheat, barley and jewarree, is performed in the field by the tramp of muzzled oxen, and the other produce is also cleaned in the open air by means of long crooked sticks wielded by the arms of the sturdy peasants, in as short a time as possible; bread and beer being prepared in great quantities. The farmer hires his immediate neighbours according to his means; hundreds assemble on the spot, the process commences with an uproarious song of exultation, and a most animated scene of noise, labour and confusion ensues, until the grain is entirely separated from the straw. It is strange, that the Jews on their emigration did not introduce into Abyssinia, among their other improvements, the rollers and wheels of wood, and the more perfect system in use at the time in their own country, to facilitate the operations of threshing; but here, as in the earliest days of patriarchal simplicity, the same pristine fashion is preserved.

> "And round and round, with never-wearied pain,
> The trampling steer breaks out the unnumbered grain."

45. After the grain is trodden out, it is winnowed, by throwing it up against the breeze with a wooden ladle, the operation being continued until the pure wheat is entirely separated from the chaff. It is then gathered into a heap, and carried in skins to the dwelling of the owners, to be stored up within the walls of the domicile in wicker baskets and large earthen jars; for a detached barn is nowhere to be seen in Abyssinia belonging to a private individual. The treading floor is usually an open area, well levelled and consolidated with white earth and cow-dung; but notwithstanding this operation, some particles of the earth are often mixed with the grain, which makes the bread gritty and disagreeable.

46. After the wheat is well cleared, it is exposed to the sun on a white skin, for the purpose of completely hardening the pickles, and pounded in a deep narrow wooden mortar, to remove the husk, this operation being performed by two women, who alternately ply their long wooden pestles to the notes of a most monotonous song. The process of grinding the grain is also allotted to the females, as well as that of preparing the bread.

47. The grinding mill is in shape like the shoe worn in the days of Queen Elizabeth. The frame-work, about two feet in height, is composed of wood, straw, and mud, and supports a large smooth slab of stone, inclining at a considerable angle from the heel to the toe. The female stands at the heel of this gigantic slipper, and with a loose fragment of hard rock, held between both her hands, contrives by dint of great personal exertion, and by rocking herself to and fro in a truly uncomfortable position, to bruise the grain into a form somewhat resembling flour, which descends in scanty streams over the toe of the machine, into the vessel placed for its reception.

48. The flour is then mixed with water and yeast, (sour dough macerated in hot-water,) and worked up into large thick cakes, a foot and a half in diameter, which are very carefully covered with the leaves of the plantain. Each cake is then individually enclosed between two earthen pans, a strong fire of charcoal and cow-dung is next heaped about the locomotive oven, and in half an hour the crushed matter is considered ready for use, which a well-fed Indian elephant would most probably reject, with some hint to his keeper, of better baking in future.

49. The foregoing is the most superior bread used by the wealthy classes, and is denominated "*daboo;*" but there are numerous other methods of preparing grain for food, from the mere roasting the pickles, and mixing the different sorts according to the palate of the proprietor, to this grand attempt in the art of bakery, running through all the grades of "*heliot,*" "*anababroo,*" "*anabroot,*" "*deffoo,*" "*amesa,*" "*debeema,*" "*deemookta*" and "*kilta,*" the first four of these being composed of wheaten flour, and the remainder of teff, gram, jewarree, barley, and peas.

50. The various flours used in the preparation of all these cakes being mixed up with water until they form a batter of moderate consistency are poured upon the griddle, somewhat like pancakes, and excepting those made from pea and gram flour, are all spungy and full of eyes, and considerably sour. The natives, however, are not very particular in these preparations, and the grain in a raw state, more especially gram, beans, and barley, appear to satisfy their cravings equally as the most refined method in use.

51. The following table gives the generic English and Amharic

names of forty-three species of grain and useful products at present cultivated in Shoa. Besides supplying their own immediate wants, and those of a herd of clerical drones, who devour the fruits of the working classes, there is still a considerable surplus, which is bartered to the lazy Adaiel for the product of his salt lake, which yields her crop without ploughing or sowing; and were the despotic restrictions but removed from the subject, and a small portion of European knowledge instilled into the minds of the cultivators, the kingdom of Shoa might be made one inexhaustible granary for all the fruits of the earth.

52. Table of useful products, cultivated in Shoa:—

Genera.	*English.*	*Amharic.*
Ervum lens,	Vetch,	Missur.
Cicer arietinum,	Gram,	Shumbra.
Pisum sativum,	Pea,	Allur.
Coriandrum sativum,	Coriander,	Dimbilal.
Sinapis nigra,	Mustard,	Senna fetch.
1. Triticum,	Wheat,	Sendi azazee.
2. "	" 2nd sort,	Aboolsee.
3. "	" 3rd sort,	Zohcongumber.
1. Hordeum hexastichon,	Barley,	Gebs.
2. "	" 2nd sort,	Zujulkupsoo.
3. "	" 3rd sort,	Mooga.
Avena pullens?	Oats,	Gerama.
Poa Abyssinica,	"	Tef.
Vicia faba,	Beans,	Bakkela.
Nicotiana tabaccum,	Tobacco,	Tumbaco.
1. Zea Mais,	Jowarree,	Mashilla.
2. "	"	Waggare.
3. "	White large fruit,	Gorondjo.
4. "	Very long stalk,	Yakkun ehliel.
5. "	Perfectly white,	Tehara kit.
6. "	Mixed red and white,	Kultatoo.
7. "	Red used for making beer,	Zungada.
8. "	Short-stalk large fruit,	Atchara.
9. "	Red used for making beer,	Koliey.
10. "	Fruit hanging on separate threads,	Tattare.

11. Zea Mais, ...	Black, very sweet, ..	Tikureta.
12. "		Effailash.
Linum usitatissimum, ..	Lint, ...	Tulliah.
Carthamus tinctoria, ..	Safflower, ...	Lorf.
" ..	Oil Plant, ...	Noog.
" ..	Ditto, ...	Sulleit.
Musa paradisiaica, ..	Banana, ...	Moos.
Capsicum, ..	Red Pepper, ...	Berberri.
" ..	"	Tameesh.
" ..	"	Geviega.
" ..	"	Unkerdad.
" ..	Small beans, ...	Affdaugooriz.
Citrus medica, ...	Citron, ...	Thuringa.
Citrus, var.	Lime, ...	Loomy.
Cucurbita pepo, ...	Pumkin, ...	Yehburkeel.
Saccharum officinarum,	Larger cane, ...	Shumgool.
Cucurbita lagenaria, ...	Gourd, ...	Khul.
" ..	Used instead of Hops, ..	Gesho.
Coffea Arabica, ...	Coffee, ...	Boon.
Gossypium ——?	Cotton, ...	Till.

53. The sugar cane is planted at any time of the year where water is obtainable, but more particularly in the month of June, before the commencement of the monsoon ; the slips are set in the ground about a foot apart, and are suffered to root and grow up like a bunch of wild seeds. The cane is ripe in the second year, when it is cut over near the ground, and new shoots allowed to spring up from the old stick, which come to maturity after a lapse of two or three seasons. The cane is tall, scraggy, and thin, the joints being closely set to each other, and containing little saccharine juice, owing to the want of skill in cultivation, and to a proper attention to the soil. The cane is used in its natural state, as the manufacture of sugar is entirely unknown in Shoa. It is, however, highly prized, and among the great men, the gift of a very small bundle of sugar-cane is esteemed a great token of love.

54. Tradition gives to the country of Enarea and Caffa the indigenous residence of the coffee plant, spread by the Civet cat over the various localities occupied by the Illoo and Aroose Galla ; it

has flourished for ages in wild profusion over all the mountains, and was thence transported, five hundred years ago, by an enterprising trader to the coast of Arabia. In Shoa Proper, the cultivation is directly interdicted, as savouring too strongly of the abhorred Mahomedan; and although the plant grows strong and healthy in the proper situations, the Christian inhabitant is debarred from this refreshing and valuable produce. In the bordering districts, however, subject to the despot, the restriction is not enforced; the plantations are numerous, and among all the Galla tribes, there is a never-failing supply of the sober berry.

55. Planted before the rains, the seed soon appears above ground, and when six months old, the seedling is transferred to take the place of some old and decayed tree. Water and the manure of sheep are plentifully supplied, and the crop, which from a full bearing tree is generally from thirty to forty pounds, is gathered in March and April. The shrub averages from eight to ten feet in height, the foliage is dark and shining, and the branches are thickly studded with fruit. It takes six years to arrive at full maturity, although producing a slight crop in the second season; it grows luxuriantly in any sheltered situation in the vallies, delighting in the soil which has been gradually washed down from the adjacent heights, produced by a decomposition of the trap rock.

56. The berries are in the first instance of a dark green, which becomes red before pulling, and at the same time, a whitish milky-looking pulp called "*gullabroo,*" fills up the place between the cuticle and seed; after the crop is shaken and gathered from the branches, it is spread out in the sun until the pulp dries upon the berry; the seeds are kept one month in the sun, before being extracted from the pulp, and during the drying operation are never placed in the house, but kept freely ventilated outside; they are afterwards packed in dry leather bags, and carried to the market. The seeds intended for the plantation are retained enclosed in the dry pulp, and are planted by the hand-full in a small plot, which is carefully manured and well-watered. The "*gullaba*" is sold separately from the bean, and is often used mixed with the decoction of the "*chaat.*"

57. The ruler of Hurrur does not suffer any importation of coffee into his own dominions; neither from Shoa nor from the country of

the Gallas. For the better security of his own monopoly in this article at the ports of Zayla and Berberri, the plant is successfully and extensively cultivated ; but the price given at Hurrur is high in comparison with what is paid in Abyssinia, and the average prices demanded for the commodity by the Hurrur merchants at Zayla and Berberri, seem to be exactly those customary at Maysawa in the Red Sea, varying from five pence to seven pence a pound.

58. The impracticable state of the tedious road to the sea coast, the lazy indifferent character of the Danatiel camel owners, who, regardless of the value of time, spend months upon the journey, and the fitful caprice continually displayed by the various chieftains throughout the whole tract which the caravans are necessitated to pass, all form great obstacles to the conveyance of the cheaper produce from Abyssinia, which might, however, be overcome by British power and British perseverance.

59. But according to all collected native reports, in Caffu and Enarea the coffee grows like a weed over the rich surface of the country ; the beverage is in universal use among the inhabitants, the price paid is almost nominal, and the conveyance of water carriage, which may be afforded by means of the great river Gochof, is alone requisite to transport the product to any quantity to every portion of the globe, to the great profit of the speculator, and to the honor of the Government which should carried this beneficial measure into effect.

60. Cotton grows in the sheltered nooks, on the eastern face of the mountains, and in the vallies at the extreme foot of the range ; but from the superior luxuriance of the plant, and the amount of crop which is produced in the valley ground, the natural climate seems to be in those sheltered spots which much resemble, in atmosphere, the more favored parts of Kandeesh and Guzarat. The plant is a shrub which varies in size according to the locality and supply of water, from three feet in height to upwards of seven ; it assumes generally the shape of a pyramid, the lowermost branches extending in width to nearly the entire height of the bush, the leaves are of a large size, the stalk appears more soft and yielding, and the whole appearance of the plant in every situation is more healthy and luxuriant than any of the species I ever saw in India, with the exception of the Bourbon cotton, to which the Abyssinian cotton bears a considerable external

resemblance. In some spots the plant is gigantic, measuring seven, eight, and nine inches in circumference; and the advantages of a very productive crop twice during the year, and the existence of the plant during five seasons, together with the heavy crop of particularly fine wool, even during the first season, give this species a most deserved pre-eminence.

61. The cotton seed is placed for a time in wood ashes, and then well rubbed with red earth before planting, and when the locality is favorable for irrigation, water is invariably given to the plant. There are two kinds, the Gondar species which grows in a spreading dwarfy fashion, and the other that of Efat, which rises tall and straight from the ground, but the seeds of both are planted together in the same field, though the produce is separated in gathering in the crop. The Gondar species is reckoned the superior of the two, the wool being finer and the cloth produced softer and more elastic; but the plant enjoys a shorter existence, as the Efat species remains productive in the ground for four and five years, whilst that of Gondar is exhausted after the third; it is also customary to cut the Efat plant over on the fifth year, close to the ground, which is ploughed up and sown with wheat or other grain, and on the removal of the crop, the young cotton shoots have appeared well above the ground, and produce for two further seasons.

62. The pod when ripe is cut with a knife, the husk immediately taken off, and the wool forthwith deposited in a bag. No dirt is any where discernible, as the pod is cut directly from the tree and great care taken in conveying the cotton wool into the sack. One full bearing bush produces between four and five pounds of raw stuff, twice during the twelve months. The processes of cleaning, teasing, bowing and twisting are entirely performed by the women, who extract the seeds in a house by means of a smooth stone and an iron spindle, which is merely rolled over small portions at a time, the strength of the female arm being sufficient to expel the seeds, without bruising them, or in any way injuring the fibre. A common bow is then used in the process of teasing this wool, and as spinning wheels are unknown in this country, the thread is twisted by means of the ancient spindle, which is the same now in use among the Indian *hammauls* and *brinjarris;* the spinning motion being given by a rapid pressure between the left

palm and naked thigh, whilst the right hand is carried high in the air, for the operation of roving.

63. Where time is not of value, and where the labour of women is held exceedingly cheap, the want of machinery is in a manner supplied by these enduring and hard-working creatures; and although the utmost efforts of a female can but prepare the small quantity of three or four pounds during the day, still the crop is all cleaned in due season, and the manufacture of cloth, though coarse, is exceedingly durable, and at present forms the great staple of exportation from Shoa. At this present juncture when the Government are expending so much treasure to enable the East India merchant to compete with the American in the British market, an extended experiment of the qualities and properties of the Abyssinian cotton might be advantageously made, and it is natural to be supposed, that the result will prove satisfactory, when we consider the greater attention paid to preparing and manuring the soil, the great assimilation of climate, and the mode of gathering in and cleaning the crop at present practised in India.

64. The following is the description of the two cotton plants found in Abyssinia, *Gossypium Gondarense,* seeds sprinkled with short hairs, cotton white; capsules three-celled, three-valved; flowers large, yellow, leaves three-five lobed; lobes commonly obtuse. "*Efatense,*" seeds completely covered with a close down; cotton white, capsules three-celled, three-valved; flowers, small with a red fundus. Leaves three-five lobed. Lobes accuminated.

65. There are two prime sorts of wheat, the white called "*azazee,*" and the red "*zohoon goombar*" (elephant tusk,) which is also the denomination of a species common in Syria; the white is the more prized of the two, possessing the ingredients of a finer flour, easier of digestion, and from its color, being entirely used in the bread of the more wealthy classes.

The red species, however, possesses an exceeding sweet flavor, is the more hardy plant, and grows generally in situations where the white wheat cannot thrive. A third, but inferior species, called "*abolsee*" is cultivated only by the poorer classes of people; of barley also there exists three kinds, but this grain, together with oats, is raised rather for the use of the slaves and farm stock, than as food for the farmer, all other

grain being preferred to this, which when employed for family use, is added in very minute quantities to a large proportion of some other species.*

66. There is no perceptible difference between either the Abyssinian or the various oil plants, and those common in India; the gram is reserved exclusively for the food of man, and used either parched or ground into flour. The seed of the '*loof*' or safflower, besides supplying a fine clear oil, is also prepared for food, and being mixed with the roasted pickles of gram and red wheat, and seasoned with salt, forms the common subsistence called '*kolo*,' which is always taken by the Amhara on his journeys and military expeditions. In the absence of all machinery, the oil is extracted in a very simple manner, although the process is tedious and unprofitable, and of course attended with considerable bodily exertion. The seeds are in the first instance slightly roasted over a slow fire, then pounded in a wooden mortar, and afterwards ground into a pulp on the hand-mill. This consistency is mixed with a modicum of water and boiled in an earthen pot, until the water be entirely absorbed in the operation. The oil remains at the bottom of the vessel, and is refined by repeated strainings through a series of cloths.

67. *Tef* bears much resemblance in its external appearance to rice, and like that plant, delights in low moist hot situations. The color and size of the stalk also, in all its forms and seasons, and the peculiar aspect of the light waving ear further increases the deception; but the grain is very minute indeed in size, oblong in shape, and possesses a pleasant sweet flavor, and as it is one of the most expensive articles of food, it is seldom used individually in the preparation of bread, but mixed with some cheap grain.

68. The *juwarree*, of which twelve sorts are distinguished, reaches the enormous height of 15 and 18 feet, the head is gigantic, and often weighs many pounds, and the natives are fond of chewing the green stalk, the juice of which is agreeably sweet and refreshing. Some of the varieties are used for food, whilst others, and more especially the

* Secale nostrate carent Habessini, panem ex isto factum quum olfacerit Gregorius verum tefum esse, et ipsissimum tefi odorem olere ajebat. Avenam satione indignam censebat, et a suis sperni dicebat. Hordeum enim, vel gramina plicata, equorum ibi pabulum est.—*Sobi Ludolfi Hist. Æth. Lib.* 1. *Ch.* 3 *and* 4.

"*zungada*" and the "*kolye,*" are employed solely in the manufacture of beer. The expected produce during a good season, is calculated at eight hundred times the quantity of seed committed to the ground, and a bad season produces half of the above enormous return; but the plant will not grow on the elevated plateaus, and is entirely confined to the vallies below.

69. Beans are eaten raw in the green state, or stored up for use during fast time. They are very inferior in size to the European vegetable, and are invariably of a dusky white color. The plants themselves grow erect to about the height of two feet; the flowers of a white color have dark spots in the centre, and the pods grow upwards in bunches. Peas are used in the same manner as beans. They are sown broad-cast on the field, and are suffered to creep tangled over the surface, without any artificial support whatever.

70. Tobacco thrives well and luxuriantly over all the country, and is cultivated among the enclosures and gardens to a considerable extent, notwithstanding the anathemas of the priests, who having falsely interpreted the words of Jesus Christ, "*That which cometh out of the mouth of a man defileth him,*" have interdicted the use of this narcotic, under the penalty of exclusion from the churches. There is a considerable demand, however, among the Moslem part of the population, who are freely addicted to its use, and many of the Christians are even willing to pay the penalty of inhaling the seductive leaf. The seed in Abyssinia is planted during the month of July, and the leaves are ripe for plucking in December. Whilst yet in the green and moist state, they are pounded in a wooden mortar to a perfect paste, and afterwards worked up into small thin squares, like indigo cakes, which are well dried in the sun, amongst a sprinkling of wood ashes; but the tobacco grown at Hurrur, and among the mountains of the Ilto Galla, is cured in the leaf with saltpetre, is of a bright yellow colour, of a remarkably good flavor, resembling the finer sorts raised in Arabia and Persia, and is a great article of import into Shoa. Caravans continually arriving at Alio Amba, laden with this produce from Humur and Churchur,

71. The leaves of the "*gromum,*" a gigantic species of very coarse low cabbage, which grows to the height of eight or ten feet, as well as onions, chillies, and a kind of tasteless gourd, are used as articles

of sustenance during the long weary fastings which are strictly imposed on the Abyssinian subject, but are rarely on other occasions produced as adjuncts to the dinner board. The seeds of the *goomum* are thrown about the enclosure before the commencement of the rainy season, and soon afford a supply of green food in the accumulation of filth which encircles every hut, whilst the onions, chillies, and gourds are invariably raised in the immediate vicinity of running streams.

72. The "*chaat*" is a shrub very extensively cultivated in Shoa and the adjacent countries, and is much used by all the inhabitants as a substitute for tea, which it resembles in all its properties and qualities. The affinity in the name with the Hindoostanee term used for the China plant, is passing strange, though many words of the Amharic and Ethiopic, and more particularly the Galla language, seem to possess a common origin. This plant is said to have been originally brought from the western mountains, the elevation of which agree with that of the Chinese tea districts, being from five to eight thousand feet above the level of the sea. The leaves are alone used, either chewed plain, or boiled in milk or water, and sweetened with honey; the qualities and properties are bitter and stimulative, like those of the tea plant, and if used in excess, prevent sleep entirely during the night. The shrub is cultivated in plantations, where the average heat of the year may be about 60° in the shade; although the rays of the sun are very powerful; it thrives best in a light gravelly soil, and grows to the height of twelve feet from the ground. Planted during the month of June, the leaves are plucked during the dry season, and simply exposed on a skin, until well dried in the sun; one pound weight costing from one-penny to two-pence in the bazaar.

73. The diminished import of tea into England has introduced the "*yerba mate*" from Brazil and Paraguay. The virtues of the "*chaat*" are equally to be appreciated; the beverage produced from it by infusion has a pleasant flavour, not unlike some of the eastern teas, and as the plant is said to be indigenous in the countries watered by the "*Gochob*," it might be found convenient as a medium of exchange for British manufactures. From the following description of the plant it will be seen, that it is of the same family as that used by the lower orders of the Chinese, and that the climate in which the one is produced, is most suitable for the cultivation of the higher flavored,

and more delicate species so prized for foreign exportation. "*Chaat,*" the Abyssinian tea plant, is a shrubby plant known already under the appellation "Celastrus eudules," and belongs to Pentandria monogynia, Linn. and to the natural family of "Celastrineæ," or to that sub-family "Rhamnea" which have in the flower the stamens alternating with the petals. The family Rhamneae; viz the genus Rhamnus, itself supplies a substitute for tea to poor people in China, and is known under the name of Rhamnus theozans. Our plant may be characterized as follows: frutex inermis, foliis oppositis, petiolatis oblongis, servato dentatis glabris. Calys minimus, persistens. Petala, 5 Stamina 5, Petalis alternantia. Fructus superns, oblonga, bacca, 8 locularis, polyspermus vel abortive monospermus. Inflorescentia axillaris-cymosa, cymiredina stipulati. The plant supplying the Paraguay tea is a species of Ilex, and belongs to the same family, Celastrinae, sub order Aquifoliaceæ.

74. The Lime tree grows wild in the forests, and seems to form a favorite morsel for the elephant. It is also cultivated in the gardens, and used by the inhabitants for many culinary purposes, as well as in the preparation of leather, and the cleaning of metals. A species of plantain, resembling in size the horse plantain of India, produces a large description of luscious fruit in great abundance among the vallies, and from the wild species, a stout light cordage is manufactured from the exterior coarse fibres of the stem which rises to the height of eight feet; but the inner fibres are of a very fine texture indeed, and might be used with advantage in the fabrication of stuff for clothing. The Abyssinian flax, however, is of a good quality, although at present only cultivated on the face of the mountains for the sake of the seed, which is large and well filled; the stalk is very short, as no importance whatever is attached to the growth of the plant for other purposes than that of extracting the oil. In a moist spot, the reverse would take place, and from the fine appearance of the seeds it may be presumed, that a lengthy fibre could be very easily produced in the country. Peaches do not attain any size in their present localities; and the vine is only to be met with in some of the gardens belonging to the Abyssinian epicures. There are three kinds, a large red, a very small currant, and a small yellow grape. But the fruit is harsh and sour, it ripens in April, and as no care is taken of the plant in any of

the delicate operations which long experience has proved in all countries to be imperative, the result of the crop is one which might be expected.

75. The grub, called *tempash*, is very destructive to the crops, eating up the roots of the young plants before they have acquired strength and consistency. Baboons exist in numerous colonies, and inflict infinite damage on the surrounding fields; troops of two and three hundred descend upon the grain during the night, and leave but a small remnant for the proprietor. Locusts temporarily wing their flight to these elevated regions, and devour every green herb; and a mildew called "*uramasioo*," blights the hopes of the husbandman, when there happens to be a scarcity of rain. The Galla fly also, which is as large as a bee, abounds;—a great pest to the cattle, stinging them to the effusion of much blood, and causing great pain and bleeding from the puncture; but considering the very indifferent instruments used in the cultivation of the ground, the small advance made in assisting the soil, and the drawbacks just mentioned, the return given is one which could hardly be anticipated.

76. Indeed, the seasons of Abyssinia, as well as the system of cultivation, are truly anomalous. Two monsoons annually pour down their copious floods upon the earth; a plentiful exhalation of dew distils from the moist ground during the night for months after the supply of water has been drained from the skies, and under this vivifying influence, the plants shoot up with amazing luxuriance, refreshed alike by the pure coolness of the morning breeze, and strengthened by the strong heat of the mid-day sun. Two harvests are yearly garnered in by the provident husbandman from the fat land, without its utter exhaustion and impoverishment. Whilst the ripe grain is being reaped from one field, the seed is but just deposited in the next adjacent one; the cattle employed in ploughing up the fertile soil in one location, whilst the muzzled oxen are trampling out its lately yielded treasures in the next; and all the various processes of husbandry, from the breaking up of the ground, to the winnowing of the grain, may be witnessed in one small locality simultaneously.

> "Hic ver assiduum, atque alienis mensibus æstas,"
> "Bis gravidæ pecudes, bis pomis utilis arbos."

77. Although the keeping bees may not, strictly speaking, come

within the range of agricultural pursuits, yet it appertains in general to rural occupation, and in a country where vinous and spirituous liquors are not in use, much honey is expended in the fabrication of hydromel, and forms a large item in the profits of the farmer. The same customs prevail in this country which have been generally practised since the days of Virgil; the whimsical one of making a confused clamour to induce the swarm to settle, and that of rubbing the interior of the hive with sweet-scented herbs to induce the bees to remain.

78. When the juwarree is ripe in November, long stout seeds covered with the leaves of the sweet smelling *kuskus*, mingled with the bruised stocks of other savory herbs, are set in the fields near the habitations of the wild insect, and when the young swarms take their flight from the parent nest, a loud shouting and noise is kept up until a lodgment is made upon one of the lures. The swarm is then shaken into a hive, which is fashioned of long grass in the form of a cylinder, carried to the residency, and suspended from the eaves of the house.

——— "Huc tu jussos asperge sapores,
Trita melisphylla, et cerinthae ignobile gramen.
Tinnitusque cie, et Matris quate cymbala circum,
Ipsæ consident medicatis sedibus."—

79. The hives are robbed of their treasures twice during the year, once in June and again in November; but the queen bee is invariably in the first instance extracted from her dominions, and carefully secured in a reed, and after the remnant of the family has been expelled by means of smoke and the honeycomb despoiled, the hives are plentifully besmeared with sweet herbs, and the queen being restored to her dwelling place, her liege subjects never fail on the following day to return to their plundered homes.

80. Mead formed the nectar of the northern nations, and was celebrated in song by all their bards. It was the drink they expected to quaff in heaven, out of the skulls of their enemies, and was liberally patronized upon earth. In Shoa, it is considered as much too sumptuous for the lip of the common people, and his majesty alone possesses the right and privilege of preparing the highly-prized liquor. Unless brewed with the greatest care and attention, it has a sweet mawkish flavour, particularly disagreeable to the palate, and few strangers can,

in the first instance, relish the composition; but the great recommendation to the native is its power of intoxication, which does not seem to be attended by those after-feelings of disgust concomitant on the free use of other potent liquors, no Amhara of the upper classes ever goes sober to bed, if the means of intoxication be placed within his reach.

81. The branches of the "*gesho*" plant are dried, pounded, and boiled with water, until a strong bitter decoction is produced, which is thus placed in another vessel to cool. Equal quantities of honey and water are then added, and fermentation takes place in three days. Chillies and pepper are next thrown in, and the mixture is shut up in earthen vessels, well closed with mud and cow-dung. The strength increases with the age, and his majesty's cellars are well stocked with jars filled in the days of his father, Hoosun Suggud, thirty years ago, which is little inferior in potency to brandy, and which furnishes the materials for the nightly orgies in the royal palace. In northern Abyssinia, the bitter ingredient is made from the root of the plant "*izade*," from whence is derived the name of the liquor "*iziddy*." It is much more powerful than that made in Shoa, but is not used in such disgusting quantities.

82. The "*boussa*," or beer of the country, also possesses a slight intoxicating quality, and being taken in enormous quantities, produces in the end the desired effect. The leaves and branches of the "*gesho*" are pounded and mixed with water, and the barley or juwaree, being buried for a few days under-ground, until the grain begins to sprout, is bruised and added to the bitter decoction. After fermentation, which takes place in four days, the liquor is closed up in earthen vessels, and is ready for use, according to the temperature of the heat, in ten or fifteen days. The capacity of an Abyssinian to swallow this sour, disagreeable mixture is truly wonderful. Gallons are consumed every evening in every house, and serious rioting, and often-times bloodshed, are the general result of the evening festivity.

83. The Abyssinian breed of horses would be considered in England somewhat undersized, and deficient in make and bone; they are entirely kept for the saddle, the want of roads militating against the use of waggons, and established custom forbids their employment in agricultural purposes. With long shaggy coats from exposure to the seasons,

geldings are alone employed in journey or the foray; the mares and stallions being kept at home exclusively for the sake of breeding. The animals are hardy, enduring, and sure-footed, and from their excessive cheapness, might be exported with advantage to some of our Eastern colonies. Those reared among the Galla tribes are deservedly considered the most superior, the reckless character of those wild riders impelling the colts over the most difficult ground in their youth, and thus during their education, imparting to the animal a degree of boldness and confidence, which is not to be found among the Amhara steeds.

84. The animal intended for the saddle, is castrated on reaching his second year. The opening is made with a sharp knife, and after the operation, actual cautery is freely applied to stop the effusion of blood. Although the practice appears rough, yet very few horses are lost from subsequent disease; and indeed from long use and experience the art of castration has made considerable advance as a science in Abyssinia, every available animal being operated upon by these amateurs, from the hapless Galla prisoner taken in the foray, to the domestic fowl which creeps moping about the farm yard.

85. Horses are never shod, nor is any attention paid to cutting or fashioning the hoof, which being exceedingly hard, for a time bids defiance to all rocks and inequality of ground; but at the end of a long expedition, many of the animals suffer considerably from the want of the farrier. The bridle is particularly severe, and possesses even greater power than the most potent Mahratta bit, long cheek pieces being fixed to an indented bit, which is inserted into the mouth, and secured round the lower jaw by means of an iron ring, which like a tightened curb, acts to the complete restraint of the most violent animal. The saddle is of the Tartar form and fashion, two light boards connected by a high wooden pommel and cantel, leaving an open space for the back bone, and all tightly sown together; a skin covers the construction, and the stirrup irons are very minute indeed, as the toe of the horseman is alone placed in rest during the exercise.

86. The horse is considered a very inferior animal to the mule, whose soft, agreeable pace suits better with the general lazy habits of the Abyssinians, and whose patience and surety of step among the steep rocky mountains are sufficiently appreciated; the prices given

for a mule are consequently higher, and the care taken of the animal proportionally greater. Whilst the horse is allowed to run in his pasture ground during all the seasons of the year, and scantily supplied with old straw, on the failure of the herbage, the mule is fed upon barley and the best *'tef'* fodder; is a continual inmate of the master's dwelling, sheltered from the cold bleak wind, and living on most familiar terms with the other members of the family.

87. Horses and mules are afflicted with few diseases in these Alpine regions; strangles called "*faroo,*" and worms in the ear called "*dhadick,*" being the only local diseases to be feared. The former is cured by fumigating the nostrils with dung, pea straw and the bark of the "*kolynal,*" ("Euphorbia heptagona,") and the latter by the application of oil and the fruit of the "*césso,*" which is a most powerful purgative medicine in general use among the natives for the expulsion of the worms which their raw meat diet so freely engenders.

88. The common breed of cattle which cover the plains in great droves, is chiefly of a black colour, with long thick horns, short stout legs, and deep carcases, weighing probably from 250 (two hundred and fifty) to 400 (four hundred) pounds. The "*sanza,*" so justly celebrated for his immense horns, is a native of the Galla countries to the northward, and is rarely met with in Shoa, except as curiosities among the royal herds. I have occasionally seen them among the "Kureio Galla," a monastic tribe dwelling in the plains to the south-eastward of Efat. The horns are truly magnificent, stretching up four feet in height, and spreading to a like distance in width between the tips. The animal is of a fine large breed, and has a wild and noble appearance, carrying his well-defended head in a free position, like the stag proud of his twelve tynes.

89. During the rains and spring season, the cattle pick up a plentiful support among the green hills and meadows; but the verdure of Abyssinia is very fleeting; during the dry season the grass becomes completely withered up and destroyed, and many cattle die from the lean herd from sheer lack of pasture, as the grass and straw from the winter fodder is scantily dealt out to the bullocks, and no shelter whatever allowed them from the inclemencies of the weather.

90. The cows, however, are fed on cotton seed, barley, salt and grass, as their milk is a great article of food, and the butter is a valuable

object of traffic. The cream is allowed to settle in an earthen pot, and is stirred up with a stick split at the end into several points, to which a quick rotatory motion is given, between the palms of the hands, and the butter-milk being strained through a cloth, tied over the neck of the vessel, the particles of butter are collected and packed up in a gourd. Being prepared with no attention to cleanliness, soon acquires a rancid smell, which, according to the taste of the inhabitants greatly enhances its value. Besides being used in their culinary purposes, they employ it as pomatum for the hair, and without a plentiful supply of the glistening grease upon their heads, they consider that there is something particularly deficient in their personal appearance and external decorations.

91. The cattle disease is called "*abba sanga,*" the legs swell, the appetite entirely fails, and becoming thinner and thinner, the animal dies. This disease is either infectious or epidemic, and no remedy has been discovered to cure it; but the Amhara soon recruits his droves at the expense of his Galla neighbour. The last military expedition procured an addition of twelve thousand beeves to his majesty's wealth in kine, and a proportional benefit also accrued to his robber subjects.

92. There is some slight attention paid to the comfort of the sheep, which also exist in numerous flocks throughout the country; they are of a small size, without the ponderous tail of fat, and in general are of a black and white colour. In the dry season, they are during the night enclosed in an open pen, but during the prevalence of the rainy weather, they are admitted to the shelter of a roof; for although the hoar frost nightly covers the surface of the land during the months of October, November and December, yet ice is seldom seen. There is plenty of food upon the ground, and the cold does not seem to be so injurious to the flock, as exposure to a continuation of rainy weather. The pregnant ewes are always kept in the house until eight days after the lamb is produced, when they are again permitted to join the flock.

93. The Abyssinian sheep is found in all parts of the country; the ewes are very prolific indeed, lambing twice a year, and having often two or more lambs at a time; and a tolerable supply of grass and salt is stored up for their sustenance, during the season of drought.

The flock is regularly washed in a river once a week for two months previous to shearing, an operation which is performed twice during the year, in June and November, and whilst in this state of preparation, the sheep are kept in a cleanly littered pen. The wool varies considerably in texture, that of some being very coarse, whilst that of others is extremely fine. No care, however, is taken of the quality, but nature is left in this respect, as in all others in this country, to take her own course. The animals are much afflicted with an incurable disease called "*koakoot*," which particularly in the dry season carries off large numbers. The throat swells to an enormous size, and becoming filled with water, the victim expires in a few hours.

94. The long-haired sheep, called "*baala lovisa*," inhabits the high cold countries of Maus, Lako, and the Wolle Galla. The hair is so lengthy, that it reaches the ground on every side, and gives the animal the form and appearance of a large baboon. It is carefully kept in a clean pen, and frequently washed. As the value of this animal is comparatively high, in the event of confinement producing great corpulence one of the legs is broken to reduce the grossness of habit, which is supposed to injure the hair; this coat is of a reddish hue, but afterwards blackened in an artificial manner, and from it the handsome cloaks are fabricated, which are worn by the more wealthy inhabitants of Shoa. Other breeds also of superior size and fleece exist among the Galla tribes, which are highly esteemed at the royal table; but the Abyssinian is not fond of altering the faith or the custom of his forefathers, and the necessity for any improvement in the present small scraggy flock, has not as yet entered the current of his ideas.

95. Goats are considered a very inferior farm stock to sheep; they are subjected to more diseases, and the flesh is supposed (by many of the inhabitants,) to possess the most baneful properties, in proudcing in the human frame the venereal disease. The hides, however, are held in esteem, and the milk is reckoned of utility as an internal remedy during the prevalence of small-pox; whilst at the same time, the eyes of the sufferer are constantly washed and fomented by a warm application. At all other times it is reckoned highly disgraceful to touch the milk of either goats or ewes, or abstract the food from the young animal. The prepared goat skin is soft and pliable, and impervious to water, it

is used for the conveyance of all articles, and its peculiar softness may be attributed to the astringent qualities of the plant "*keemit*," with which it is tanned.

96. On account of the steepness and ruggedness of the ground, the patient ass is chiefly employed in carrying burdens, which are invariably packed up in skins, and roughly tied with thongs on the bare back, producing sores and ulcers during the very first stage. The ass is small, hardy, and very frequently of a piebald color. His lot is the same here as in more favored spots of the globe, having to perform the greatest quantum of labour on the least supply of food possible, and the animal must remain in bondage and dreary work among the mountains, until Amhara courage be sufficiently pitched to attempt the subjection of the elephant, whose strength and docility would point him out to any but such a race, as the animal of burden, reared by nature in these parts for the express purpose of transport. The remainder of the farm stock consists of a few fowls, which are allowed to nestle in the interior of the domicile. Although guinea fowls run wild in every copse, no attempt has ever been made to domesticate this useful breed, and pigs and ducks being held impure by these Jew-Christians, are nowhere to be seen in their reclaimed state.

97. The hay is cut with a sickle in October, before the grass becomes withered, and after being well dried is heaped in stacks on the fields; but although clover, trefoil, and many other nutritious grasses grown wild in many situations, and the natives are fully aware of their nourishing qualities, and confess that it would be most desirable to obtain a permanent supply, yet the coarse meadow grass is allowed to remain in the state, in which nature originally covered the field, affording another striking proof of the slowness with which uncivilized man admits of any improvement when contrary to ancient habit and custom.

98. There is little known or attended to in fattening of cattle for slaughter; those intended for the royal table alone have a portion of salt mixed with their fodder, as also the large breed of Galla sheep kept for the like purpose are for a short time fed on roasted barley; but otherwise, the meanness of the national character is fully displayed in choosing the leanest of the herd for consumption, and the craving of the savage is satisfied by the quantity of raw flesh without any refer-

ence to the qualities of the meat, which, however, may be mainly developed in the different methods of civilized preparations.

99. The following table contains the names of plants and trees which flourish wild in the forests and meadows, but which are gradually disappearing before the axe of the wood-cutter, and the plough of the undiscerning farmer. The endote, the cope, the edible fruits and savoury herbs which now grow unreclaimed in the waste, might, by cultivation, be increased in value and specific quality, and many in their improved state, would serve as a pleasant addition to the Abyssinian diet. But in the absence of precept and example, prejudice and disinclination to alter the customs of his ancestors deters the native from progressing in the arts of civil life, and his social state of existence appears even to have retrograded from ancient times, and more especially in the habit, or necessity, which first induced the use of raw meat as the grand aliment of life. On this point he is truly patriotic, and entertains the most sovereign contempt towards all those who reject uncooked animal food. It is, however, remarkable, how little mankind in general are agreed in the matter of food; for the very Abyssinian devourer of raw flesh would allow the quivering morsel to drop in horror from his lips at the sight of a roasted duck, or a well-cooked piece of pork.

100. Table of useful wild plants:—

Amharic.		*Generic.*
Cosse, ...	.. Purgative, ..	.. Hygenia Abyssinica.
Endote, ...	.. Used as soap, ..	.. Glinno, Nov. Spec.
Wanzey, ..	.. Fruit, edible, ..	.. Cordia Abyssinica.
Injore, ...	.. Ditto ditto, ..	.. Rubrus pinnatus.
Roshim, ..	.. Ditto ditto, ..	.. Flacourtia Shoa.
Ajam, ...	.. Ditto ditto, ..	.. Corissa Shoa.
Lozi, ...	.. Ditto ditto, .	.. ——— ?
Callao, ...	.. Purgative, ..	.. Rhammus Shoa.
Cuscusso, ...	.. Sweet herb, ...	.. ——— ?
Ensete, ...	.. Plantain, ..	.. Musa paradisiaca.
Tete, ...	.. Timber tree, ..	.. Juniperus excelsa.
Lyba, ...	.. Ditto ditto, ..	... Tascus elongata
Weisa, ...	.. Ditto ditto, ..	..
Balm, ...	.. Clover, ..	.. Thyme.
Mint, ...	.. ..	.. Trefoil.

101. There are few edible sorts to be found wild among the fields; and as in other countries possessing a moist and cold climate, the scanty forests produce no abundance of spontaneous fruits. A variety of grasses, however, and many of a superior quality, vegetate on the meadow land. The root of the ensete is held in high esteem among the neighbouring countries, and more especially in Garague, being scraped and preserved in large quantities in excavations under ground; the bread made from this substance is said to be very sweet and nourishing* The bramble berry, the corinda, and a species of the pear flourish on the eastern face of the mountains; but the remaining varieties of wild fruit may be considered, in their present state, more properly the food of the monkey and other denizens of the wilderness, being insipid and unfit for the sustenance of man. Clover and trefoil, balm and mint, luxuriate wild in all the meadows.

102. The houses are larger than savages in general take the trouble to build, but the low and damp condition of the floor, appears remarkable in a country so liable to cold and rheumatism as the upper parts of Shoa. Instead of their being raised above the level of the surrounding surface, the rocks are invariably scooped away, and the descent of a foot from the outside, leads into the interior of the hovel. The house of the husbandman is composed of wattle and dab, and covered by a grass thatch. It is always fashioned in a circular form, having a closed verandah of from four to eight feet all round; there are four apertures into this from the inside; two which lead out of the house, and two into the dark alcoves which are used as dormitories by the heads of the family. The slaves and inferiors repose in a heap on the floor of the inside apartment, where the fire and the few requisite utensils for kitchen and farm purposes, together with the mule and the hens and chickens, form a very lively group. There is no chimney, and the household furniture must be described negatively; no bed, no table, no chair; these the Abyssinian does not reckon among the necessaries of life, as he can make the earth serve him for all three;

*Sed non sine admiratione dicenda est arbor Ensete, Indicae ficui similis duarum oryziarum crassitie. Nam truncata enumeris tot vicibus sponte renascitur: quæ omnes inessunt ut arbor hic alium fructum proferre opus non habeat: tota enim prodere est. Nam consisa abcocta viliorum hominum famem sedat, qui ut folia conclusa cum farina depsunt, ac pullis inserere dant:—*Sobi Ludolfe Hist Aetheop.*

and altogether, the inhabitant of countries where wholesome air and freedom from vermin are ranked a mong conveniences, must object highly to the want of either, under the roof of the Shoan farmer.

103. There is a dreary look of desertion also in the external appearance of all the lone farm-steadings which are scattered over the country, and the absence of all tidiness and comfort in the arrangement of the yards, as well in the interior of the houses further enhances the picture of desolation. The cattle, the farm stock, and the inhabitants, all reside under the shelter of one roof, not particularly to the comfort or cleanliness of any party. The unseemly dunghill, which in other countries is carried far away to improve the soil and the means of the proprietor, is here suffered to accumulate and rot adjoining the entrance to the dwelling, poisoning the atmosphere with its baneful exhalations, until carried by the descending torrents a few yards from the door, to feed the rank weeds which batten in the filth. There is no attempt at the small trim garden or the neat rustic porch; but bare mud walls and slovenly thatch rise from the midst of a straggling wattle stockade, which completely surrounding the premises, is intended to preserve the inmates from the night attacks of the prowling hyena, but which imparts an idea of utter confinement and misery. There are few trees to break the monotony of this rural scene; no busy hum of glad labour; and the want of bustle and noise among the elders, and the sounds of merry games and amusements among the children, appears to the European visitor, strange, savage, and unnatural.

104. Rough-clad and devoid of every finer art and elegance of life, the original proprietor of the sheep still wears but the raw skin of the animal, which is shifted over the shoulders according to the vicissitudes of the weather; a pair of coarse cotton trowsers, barely reaching to the knees, and a scanty cotton waistcloth summing up the remaining articles of the wardrobe; which, however, is perfectly sufficient for the purpose required as the dearly-beloved coat of rancid fat seems to form a most effectual preventive against the extremes of either heat or cold. If but a small portion of this grease, which is so plentifully besmeared over their Christian persons, was more usefully employed in the fabrication of candles, the long, idle evenings might be passed in a more pleasant and profitable manner,

than in the swilling of beer, like hogs, and in those brawling contentions which at present stigmatize their nocturnal meetings.

105. All sleep stark naked, stretched upon bullock hides, and huddled close together for mutual warmth, covered with coarse black cumlies; and as the use of the candle is but imperfectly known, and the use of oil a royal prerogative, when not carousing at a neighbour's house, they hurry soon to repose, and start with the first call of the cock to lounge idly about the premises. Their fear of wild beasts and evil spirits in some measure tends to restrain individuals after nightfall within their own walls. They will on no account touch food in a dark hut, and unless a fire be lighted, refrain for hours from satisfying their hunger, under the strange superstition, that the devil would otherwise enter in the dark, and that there would be no blessing upon the meal.

106. It is the province of the men to plough, sow, and reap, split the wood, and cut the grass; whilst to the women, all the other heavy work is accorded:— making butter and bread, fetching wood, water, and grass, spinning, pounding, and grinding. When released from his immediate avocations the peasant lounges about the village, sits in conversation at a neighbour's house, and amuses himself with a game called "*gebeta;*" and at other times, attends the markets, which are held weekly in various parts of the kingdom, the funeral feasts, and the groupes which assemble in the public square to narrate scandalous stories.

107. He is obliged to follow to the field his immediate governor in all Military expeditions, under a forfeit of eight pieces of salt (20*d.*) which is strictly enforced. Leave of absence is, however, sometimes obtainable by means of a small bribe in cloth or honey; but unless unavoidably detained, the peasant is at all times ready and willing for the foray, although obliged to furnish arms, conveyance and provision without payment whatever from the State; yet there always exists the chance of being able to capture a slave or a flock of sheep, of obtaining honour in the sight of the king, or of satisfying his brutal, inherent, lust for blood of the heathen Galla.

108. The usual food of the Amhara farmer consists of sour bread made from tef, barley, and wheat, and eaten with a strong decoction of onions, pepper and salt; milk, eggs and butter are much in use, but

meat is seldom provided for family use, though constantly to be had gratis at the "*tescars,*" or public funeral feasts, where cattle are slaughtered and devoured in honour of the deceased, and where any one who choose may be a partaker.

109. There is but little relaxation or amusement for the Abyssinian peasant. 'Seed cake,' and "twice a week roast" form no joyous burden to his song, and as yet no discerning poet has addressed himself to the feelings to render more fortunate the lot of the husbandman. Instead of holiday and feasting, saints' days and fasting are the high festivals in Christian Shoa, half the year being strictly reserved for utter idleness, and sternly marked by an exclusion of all meat diet under the fearful penalty of excommunication. Eggs and butter are especially forbidden, and also milk, which is called the "cow's son." There is nothing whatever eaten on these numerous occasions between sun-rise and sun-set; and even at the appointed time a scanty mess of boiled wheat, dried peas, or the leaves of the cow cabbage, with a little vegetable oil, is alone permitted by the bigotted priesthood.

110. Besides Wednesdays and Fridays throughout the year, which are observed as holydays, the fast of the Apostles continues eighteen days, that of the Holy Virgin sixteen, Christmas seven, Nineveh four, and the fast of Lent fifty-six; during which, working-men are strictly prohibited from all employment, and are obliged to live like anchorites, (to the great diminution of their bodily strength,) if they desire their souls to be saved from eternal damnation. Encouraged and tolerated by the king, there is no system so baneful as that of devoting so many precious and full days of the year to idleness and vice, and none forming a more fatal obstacle to the amelioration of the people. When such an awful waste of time is sanctified by the name of religion, how deeply laid must be the foundation of mental indolence! One-half of the year devoted to listless idleness, is indeed an enormous source of evil. The last generation has not added one particle of knowledge to the ignorance of the former; the same gross superstitions exist, the same prejudices against introducing any improvement or novelty, the same eternal reference to ancestral custom; and thus the Abyssinian peasants live and die without adding one jot to their small portion of wealth, or one item to their narrow stock of knowledge.

111. But although not that earthly paradise which Jesuitical fancy had pourtrayed the country to be, and although the majestic palaces, the pillars of porphyry and the Corinthian domes exist only in the imagination, yet still Abyssinia possesses the fresh vegetation of a northern climate, the vivifying ardor of a tropical sun, and the cloudless azure of a southern sky. The palaces and fanes, the gardens and gushing fountains have departed with Prester John and his glories, yet there still remains a fertile country, with most amazing capabilities, a healthful climate, and a race of beings who, having stopped at the satisfying point "of barren bare necessity," are at least less sensible to that desire for filching so peculiarly evinced by the inhabitants of rich and luxurious cities; and though poor as to the state of the country and arts, the inhabitants remain uncivilized without experiencing much comfort even in their highest enjoyment, and possessing no antidote for sorrow in their debased condition; still the contrast between their existence under an absolute and complete despotism is striking, when compared with that of their neighbours, the Adaiel, who pride themselves on being the free citizens of independent tribes. The Abyssinians are, comparatively speaking, numerous, powerful, and somewhat advanced in the arts and improvements of life; whilst the others are barbarous, idle, improvident, and licentious; and bad therefore as absolute power is in itself, there appears something salutary in any dominion over uncivilized minds, which tends so considerably to the ultimate improvement of the savage.

112. But it cannot be expected that Abyssinia should, for a length of time, take rank among those countries which are peculiarly happy, wealthy or abundant, as all the prevailing customs and practices are at utter variance with the laws for the production, consumption and distribution of wealth. A heavy taxation is enforced on the produce of the field; monastic and clerical establishments are fostered to the ruin of the people; the venal judges are paid by fees on the causes which they decide; and popular superstition and imposture have the royal sanction for abuse; whilst, on the other, not a vestige of aught that might be useful is ever taken into consideration. Here are no roads constructed for the conveyance of produce and traffic; no schools founded for the benefit of the rising generation; and fear and prejudice alike prevent the inhabitants from travelling

to foreign countries to enlighten their ignorant minds by modern invention, or to improve their benighted country by a transfer of modern art and science.

Appendix, No. 1.

Table of prices for farm produce and farm stock in the kingdom of Shoa:—

Quantity.	*Names of Articles.*	*Price.*
36 lbs.	Wheat,	2½*d.* Sterling.
55 lbs.	Barley,	2½*d.* ditto.
60 lbs.	Oats,	2½*d.* ditto.
30 lbs.	Tef,	2½*d.* ditto.
45 lbs.	Juwarree,	2½*d.* ditto.
30 lbs.	Gram,	2½*d.* ditto.
30 lbs.	Peas,	2½*d.* ditto.
25 lbs.	Beans,	2½*d.* ditto.
1 lb.	Coffee,	2½*d.* ditto.
1 lb.	Cotton,	2½*d.* ditto.
1 lb.	Honey,	2½*d.* ditto.
1 lb.	Tobacco,	2½*d.* ditto.
5 lbs.	Mustard,	2½*d.* ditto.
1 lb.	Coriander,	2½*d.* ditto.
5 lbs.	Linseed,	2½*d.* ditto.
10 lbs.	Safflower,	2½*d.* ditto.
7 lbs.	Red Pepper,	2½*d.* ditto.
1 lb.	Onions,	½*d.* ditto.
10 stalks.	Sugar-cane,	2½*d.* ditto.
20	Plantains,	2½*d.* ditto.
4	Citrons,	2½*d.* ditto.
200	Limes,	2½*d.* ditto.
4 lbs.	Milk,	2½*d.* ditto.
1 lb.	Butter,	2½*d.* ditto.
1 lb.	Ghee,	2½*d.* ditto.
1	Bullock Hide,	7½*d.* ditto.
1	Goat or Sheep Skin,	1¾*d.* ditto.

Slaves and Farm Stock.

1 Male Slave, ...	34 to 64 Shillings.
1 Female Slave, ...	48 to 100 ditto.
1 Mule, ...	20 to 60 ditto.
1 Horse, ...	4 to 40 ditto.
1 Ass, ...	4 to 8 ditto.
1 Ox, ...	4 to 12 ditto.
1 Cow, ...	4 to 12 ditto.
1 Sheep, ...	5*d.* to 1 ditto.
1 Goat, ...	6*d.* to 1*s.* 6*d.*
10 Fowls, ...	2*s.* to 2*s.* Sterg.
1 Set of Agricultural Implements, ..	..2*s.*1*d.*

Appendix, No. 2.

Extract on the Agriculture of Abyssinia, translated from the works of *Ludolf, Hist. Aetheop.*

The fertility of the soil in Abyssinia is remarkable, for wherever the ground is fit for culture, it brings forth all manner of fruits. The summer of so long duration being exceedingly conducive to vegetation, sowing and reaping are performed together in one spot, and two, and even three harvests are reaped during the year. The Abyssinians have grain and leguminous plants, not only such as are known with us, but others, such as tef, very useful in making bread, which is unknown in Germany. The seed is very minute, even smaller than that of the poppy, but oblong. They do not seem to possess our corn, for when Gregorius first smelt the bread made from it, he said "this is real tef, and has the like flavour." He thought oats unworthy of cultivation, and said, "it is like darnel, despised by my countrymen," for there barley and grass form the food of the horses. The Abyssinians do not sow for the express food of the domestic animals; as in all the more temperate situations grass is very abundant, on account of the perpetual warmth, and the continual moisture running under ground from the mountains. The solid rock does not absorb the rain water, which sinking under their fertile soil wonderfully refreshes the plants; on the contrary, when the moisture subsides into a rock full of holes, the hills remain sterile.

The meadows are evergreen and redolent of flowers; there is plenty of food for the bees, and for this reason an abundance of honey. With

such a plentiful supply of fruits, they neither spare nor keep aught for the following year, probably because they are confident in the fertility of their soil, or because, as yet they have no sheds for its protection.

Nor are they in the habit of bringing in their hay, although this is highly necessary on many occasions on account of the locusts, for that pest eating up fodder and seed, destroys men and beasts with hunger. Herbs of every kind grow there; not only the sweet smelling and medicinal ones of Europe, but others besides of remarkable properties peculiar to the country. *Amadangda*, as Tully says, heals broken or dislocated bones, the contrary of the *ossifraga* of Norway, which breaks the bones of the cattle treading upon it. But all curiosities in the shape of plants are naught when compared to the *assaffzoe*, which is so efficacious against snake poison, that the most noxious serpents touched with this herb are set at rest, and lay as though they were dead, and even more than this, the shade of the plants stupifies vipers, so that you are able to lift them without harm from the ground; and whoever has eaten of the root of this herb, can walk without fear among hydras, and will for many years be secured from their bites. The Abyssinians are well acquainted with the saffron; grains of it were shewn to us by Gregorius as a curiosity. He said, the expressed oil was useful in hypochondria and obstructions of the milk. They have no hops, but brew beer without this addition. The vines and grapes are excellent, although they make no wine, partly because the grapes ripen in summer when fermentation is hastened by the intense heat, and the must is destroyed. They have plenty of sugar, but no pepper, ginger or other aromatic herbs. Plantains grow there, and I strongly suppose this tree to be the *madragora* of Reuben. Another tree is mentioned by N. Godynius, which is very useful against intestinal worms, for these abound from the habit of eating raw meat; but the Abyssinians purge the belly with the fruit of this tree every month, and in that way destroy the worms.

Appendix No. 3.

List of plants used as medicines in Abyssinia:—

Names of Plants.	*Diseases.*
Ashkak Goomun, ...	Epilepsy.
Weynagooft, ...	Ringworm.
Kurrut, ...	Procuring abortion.

Hoolgub, ...	Sore throats.
Tullinch, ...	Styptic.
Baskimmes, ...	Purgative.
Toolt, ...	Procuring abortion.
Yih vuglat, ...	Fever.
Deet, ...	Fomentation.
Darakoos, ...	Fever.
Indehalaloo, ...	Diseased lungs.
Ekoolkussy, ...	Boils.
Luluffee, ...	Ulcers.
Esadeftern, ...	Cracked skin.
Cosha shella, ..	Rheumatism.
Iccoor tullinch, ..	
Ahia endote, ...	Venereal.
Yemendy roomboy,	Venereal.
Dedhie, ...	
Khut khulla, ..	Ringworm.
Chiffey, ...	
Serabuzzoo, ...	Epilepsy.
Gzimeh, ...	
Kumbo, ...	Epilepsy.
Kuklunggemaro, ..	
Toolulut, ...	Fever.
Chickogole, ...	
Misreth, ...	
Kunchul, ...	Venereal.
Kolkqual, ...	
Amararul, ...	Emetic.
Tuccazzee, ...	
Issagoe, ...	Serpent Bite.
Ahmadmadoo, ...	Sores.
Tucksoe, ...	Fever.
Kuffericho, ...	
Yehzemmerkoos, ..	Aphrodisiacs.
Chifferey, ...	
Dague, ...	
Fula Fedi, ...	Cattle Medicine.
Cosso, ...	Purgative.

Report on the Route from Seersa to Bahawulpore, by Major F. MACKESON, *C. B., B. N. I. Officiating Superintendent Bhutty Territory. Communicated by the Government of India.*

From Major F. MACKESON, C. B. *Officiating Superintendent Bhutty Territory, to* R. N C. HAMILTON, *Esq. late Agent to the Governor General, on special Mission to Seersa and Bahawulpore.*

SIR,—I have the honor to submit a map of the route surveyed by me from Seersa to Bahawulpore, with an abstract statement of the different stages. From an impression that your mission would be accompanied by a Surveyor, I took no measures to provide myself with instruments for taking observations for latitude and longitude, the survey has therefore been laid down from bearings with a surveying compass, on distances measured by a perambulator, but no care has been spared on my part to make it as correct as the instruments at my command would admit of.

Abstract.
Submits survey of road through the desert, with list of stages.

2. In submitting this survey I beg to offer a few remarks; first, on the general features of the country traversed; secondly, on the nature and capabilities of the road that has been opened, and on the effect its opening is calculated to have on different channels of commerce.

3. The tract of country traversed from Seersa to Bahawulpore, measures in extent, from east by north to west by south, two hundred and twenty-seven miles. The first forty-three miles are through British territory, the next eighty-seven miles are through the N. E. portion of the Hindoo state of Bikaneer, and the last ninety-seven miles are through the Mussulman principality of Bahawulpore. This tract is not, as has been thought, a desert of deep sand: the heavy sand bears no proportion to the hard soil. From Seersa to Bhatner, though void of large trees, the country near the road is covered with underwood of jhand, karil and ban: beyond Bhatner, the stunted underwood is partial, while bare shifting sand hills on a substrata of hard soil are the common feature. The population is scanty. In the British territory the inhabitants met with, are Bhattis, (Mussulmans,) and Bagri Jats,

General feature of the country—its Inhabitants —Towns.

(Hindoos). In Bikanir, the zemindars are Mussulmans from the Nai, and Bagris from Bagar-des. In Bahawulpore, the prevailing caste is Mussulman. The small towns on the road are inhabited by Hindoo merchants. The chief places are Raneeah in the British territory, a Thana and tahseil station, Bhatner and Sooratgurh in Bikanir, and Maroth in Bahawulpore. Sooratgurh and Maroth are the marts to which the scattered inhabitants of the desert resort to dispose of their produce, chiefly ghee, and to purchase in return the necessaries of life. The principal food of the inhabitants of the desert is bajra.

Tract from Seersa to Sooratgurh described—Its capabilities and prospects of improvement.

4. Between Seersa and Sooratgurh, the country bears traces of having once been well inhabited. At no very distant period, the waters of the Guggur river reached as far as Sooratgurh, and old wells are numerous as far west as Bhatner. A large belt of meadow land, four miles in breadth, extends from Seersa to Sooratgurh, which when flooded by the Guggur, is capable of producing crops of wheat, barley, gram and oats, and after the rainy season, rich crops of rice; while the Rohi or high lands, north and south of it, yield excellent crops of bajra, moot and til. The progress of improvement in this district has been much retarded since it came under British sway, by the unjust system that has prevailed in the Putteala and Kaithat states, of bunding the upper course of the Guggur river, notwithstanding remonstrances from the British authorities running through a twelve years' correspondence. Villages that enjoyed the benefit of the Guggur inundation when under Patteala, have within the last six years, since their transfer to us, been nearly ruined for the want of it; yet it is maintained that no new bunds have been constructed. The above tract has, it is seen, great natural advantages if not unjustly deprived of them, and only requires the introduction of capital, and a more industrious race of cultivators to render it exceedingly valuable. It has suffered much from the disorders following the cessation of regular Government, and from the misrule of its late masters, the predatory Bhattis, who lived by plundering their neighbours. The Bhattis checked in their predatory habits by the strong arm of the British Government, are now slowly, but gradually, being displaced by the more industrious Seikh Jaths and Bagris, and they must either bend to necessity, and become cultivators, or retire with their herds of cattle further into the desert and across the Sutlej.

5. As regards the barren waste extending West from the Suratgurh to Bahawulpore, the prospects of reclaiming it are not very promising; not that it is altogether unproductive, for luxuriant crops of bajra, moot and til are raised on the portions of light sandy soil that occur here and there spread over a substrata of hard clay, but these crops depending entirely on the monsoon, which is uncertain, are subject to frequent failures, and the water to be found in wells is at too great a depth, and too brackish in most places, to be of use either for drinking or agricultural purposes. The measure best calculated to change the face of a large portion of this country would be, the digging a canal from the river Sutlej near Roopur, which should pass South of Bhatinda and Farid Koth, and fall into the forsaken bed of an old river called the Slakro near Bhatner. The line of country this canal would pass through is clear of all the rain torrents from the Himalaya range, and the slope continues favorable to within two marches of Bahawulpore, while the rich soil it would pass through in its upper course, should amply repay the outlay.

Tract from the Suratgurh to Bahawulpore described—Its prospects of improvement—Canal proposed.

6. There remains to be noticed one remarkable feature in the country traversed to Bahawulpore, which is the traces that exist in it of the course of some former river: and as it is to the forsaken bed of this river that we are indebted for the opening to us of a road through the desert, I shall venture to give a more particular description of it than it would otherwise deserve. On looking at a map of the desert, we find many scattered hamlets and ponds and wells marked on it, which the people dwelling north and south of the desert may have founded and dug either for watering their cattle at graze, or for the convenience of intercommunication and traffic; but in no part of the desert, save to the road from Seersa to Bahawulpore, shall we observe a continuous line of villages traversing its whole extent from E. by N. to W. by S., and their existence on this road must, I think, be attributed to the facilities afforded for settling by the desert bed of the river beforementioned. All the villages and koths, or forts on the road, which since Maroth, have been constructed within the last thirty years, stand either in or close to this deserted channel, and for the reason that wells dug in it are generally found to have sweet water, while the water

Remarkable feature in the country traversed—The deserted bed of a former river called the Slakro Ban.

of wells dug at a distance from it either North or South, is usually brackish.

Particular description of the channel of the Slakro Ban.

7. The deserted bed of the river alluded to in the foregoing paragraph is known as far East as Seersa by the name of Slakro Ban, and is pointed out by old inhabitants as distinct from the smaller channels in it, confined within which, the Guggur river now flows. The distinction continues to a few miles West of Raneea, whence to Sooratgurh the whole breadth of Slakro is distinctly marked by numerous elevated sites of villages on its banks, although the banks themselves now appear low and ill-defined. At Bannee, the Slakro is joined by the dry bed of the Wār nāli, and at Mānak, four miles east of Sooratgurh, by the dry bed of the Chittang river. From Sooratgurh to Anopgurh its course is well defined by strongly marked lines of high sand hills; those on the south bank being more conspicuous and uninterrupted than those on the north. After leaving Sooratgurh it bears but the one name of Slakro Ban; the names of its feeders, the Guggur and Chittang, being unknown. From Anopgurh to Chapao and Kalepahar, its banks and course are less easily traced; its bed spreads considerably, and divides into branches, exhibiting large expanses of flat hard soil entirely bare, called by the natives of the country, Chitrang or Duhar, and which, after the sun has risen high above the horizon, have the appearance of sheets of water, displaying all the deceptive and varying images of the *Mirage*. The breadth to which the bed of the Slakro attains at this part of its course is such as to favor the idea that it was a larger river than the Sutlej, which it may have resembled in the lowness of its banks, and in its winding and slow current; opposed to the conclusion of its having ever been a permanent stream, is the fact of its principal known feeders, the Guggur and Chittang, having been ascertained to be merely rain streams, taking their sources from within the lower range of the Himalaya. A glance at the map of the Upper Provinces will, however, shew the numerous streams by which the whole country between the Sutlej and the Jumna is drained off into the bed of the Slakro, and it is possible that some of these streams formerly possessed a more permanent character, and that their sources may not yet have been traced. Even if not permanent, the body of water accumulated in these streams in former years may have been sufficient to have

worked for itself a well-defined channel through the desert, the traces of which still remain. Ages have elapsed since this river ceased to flow, and I shall leave to those who care to prosecute the inquiry, to establish the permanency or otherwise of its character, merely observing here, that from excursions made north and south in the desert to a distance of fifteen miles from the river bed, and a comparison of the face of the country met with, with that in the bed itself, I traced to my entire satisfaction the deserted course of a large river as far as the Kalipahar wells. From that point its course was reported to me to continue on the same W. by S. direction, passing Delawur and other forts in the desert, built on its channel; perhaps joining in the end some forsaken bed of the ever-changing Indus, near where that river empties itself in the ocean.

Description of the road from Seersa to Bahawulpore.

8. The road from Seersa to the wells at Kalipahar, within two marches of Bahawulpore follows the dry bed of the Slakro, conforming to its windings. Its direction is West by South; it sometimes runs in the bed, sometimes crosses it, and sometimes runs parallel with it on the right or left bank, never deviating from one or the other of its banks more than four miles. On a comparison with the average run of marches, it is less heavy for wheel carriages than the road from Kurnaul to Ferozepore, and it would continue good at all seasons. It runs through an open country with little or no cultivation, and may be increased to any breadth; camels may march by it fifty abreast on either side of a column of troops.

Supply of water.

9. The present supply of water from wells would suffice for the passage of a *kafila* of three hundred camels, and we have only to increase the number of wells on the road to admit of large bodies of troops moving by it; with the exception of the stage of Bila-chian the water is every where drinkable and generally good.

Supples of all kinds how procurable.

10. There would be no difficulty as to supplies of all kinds on due notice being given. Such as are not procurable on the road, can be brought to any point on it in two days or less from the Ghara river. Gram for horses is not procurable beyond Raneeah, but barley and moot, or bajra may be substituted. Forage for camels, and grass for bullocks and

horses, may be said to be plentiful throughout the march, unless in seasons of unusual drought. The grass is of a kind that requires to be cut with a sickle, and notice should be given to have it cut and stored, if required for troops. Barley-bhoosa and moot-bhoosa are plentiful as far as Anopgurh, but scarce beyond that stage.

Precautions necessary in marching troops by this road.

11. *Koss-minars* are now being erected at every two miles, to shew the direction of the road by day: for troops marching at night, it would be well to take the precaution of having fires lighted at intervals of four miles, for the road once lost in the desert is not easily recovered. In the march of troops, the strictest orders should be issued and enforced to secure the few people inhabiting along the road from molestation, and all persons employed as guides, for whom at first a great demand will be made, should be liberally paid and encouraged by kind treatment.

Advantages of the direct road from Delhi to Bahawulpore through the desert—much still required to be done to draw forth its capabilities.

12. Whether viewed with reference to the march of troops, or to the dispatch of military stores from the heart of our Upper Provinces at Delhi to Scindh, or to a direct line of dâk from Delhi to Sukkur, the advantages of the new road are too obvious to require to be dwelt on. The saving of time in marching troops by this road instead of by Ferozepore would be ten days, to say nothing of the vast expense which has hitherto attended the dragging of fleets of boats up to Ferozepore from Bahawulpore and Sukkur being avoided, The time saved in the conveyance of the dâk would be upwards of three days. The advantages of the road as a channel of commerce will be separately noticed; meanwhile I may observe, that if it be an object with Government to make the road a thoroughfare, much still requires to be done to improve its resources. A greater number of wells must be dug than will barely suffice to supply the wants of travellers and *kafilas*, and encouragement must be held out to people to settle near them. The practice hitherto in force with the zemindars on the road, of exacting payment at discretion from travellers and *kafilas* for watering cattle at their wells, must be put a stop to. The zemindars should receive an allowance on the duties levied from their own Governments; for without remuneration they cannot be expected to draw water from a great depth for other people's cattle which they re-

quire for their own, while if their exactions continue, the road will not be travelled by merchants.*

The effect the opening of the new road will have upon commerce, and first on the commerce between Bombay, Delhi & Amritsir.

13. I have now to remark on the effect which the opening of the direct road from Delhi through Seersa to Bahawulpore will have upon commerce. This effect can only be fully developed when steam boats plying between Bombay and the Mouth of the Indus, and hence to Bhawulpore, shall have rendered the transport of European manufactures and other articles of commerce by that channel both safe and expeditious. We may then expect, from a comparison with the various routes by which the products and manufactures of Europe reach the great marts in the Upper Provinces and in the Punjaub, that the route from Bombay to Bahawulpore by water, and thence by land through Seersa to Delhi, will have the advantage over all others in rapidity of communication and in other respects. In point of safety, it is now much to be preferred to the long land route traversed by *kafilas* from Bombay via Pali to Bhiana and Amritsir, which is seldom free from the apprehension of plunderers. The trade from Bombay by the river route to Bahawulpore, and to the countries North-east of that mart, has hitherto been trifling in amount, a circumstance that may be accounted for by the unsettled state of the countries West of the Indus, since that river was opened in 1832, and by the natural difficulties of the upward navigation of the rivers with the unskilful en-

* Several *kafilas* returning from Delhi within the last month, have gone from Seersa round by Abohar, and along the left bank of the Sutlej to Bahawulpore, alleging as their reason for not taking the direct road through the desert, their fear of exactions from zemindars for watering their cattle. The chief advantage of the desert road for *kafilas* is its directness. The duty levied on it is 8 annas per camel more than by the circuitous route on which the Bikanir territory is avoided. Add to this, that forage though not scarce in the desert road, is more abundant in the circuitous road, as is water; and when we consider how little it requires in the shape of exaction or obstruction to turn trade off its direct channel, it is obvious that the road through the desert must be cleared from all obstacles of this nature before it can successfully contend with roads possessing greater natural advantages, even when all has been done for it, that can be done. Part of the traffic from Afghanistan that would otherwise have come by it, may now since our acquisition of territory at Asafwalla on the Ghara, cross to that place direct from Multan by Pukputtan; thus avoiding the duties to be paid in the Bahawulpore and Bikanir states. At present, however, the duties between Multan and Pukputtan are much heavier than they are between Multan and Seersa by Bahawulpore.

terprize of native merchauts uuused to the risks of water-carriage. Early in 1836, a firm of our merchants established at Bahawulpore, opened a commercial intercourse with Bombay by the river route; but meeting with some loss from the sinking of a cargo on the outset, they for a time suspended their transactions. For the last three years, however, this firm has annually got up an investment of three boat-loads of goods from Bombay, consisting of Europe long cloths, *(suphedi,)* bars and sheets of iron, spices, cocoauuts, &c.; but they shew a great want of enterprize in selecting for their voyage the season when the river is at its lowest, where there is less risk, and they can load their boats heavily. The consequence is, that their voyage from Bombay to Bahawulpore occupies seven months. They lose the advantage of being first in the market, and much of their profit is eaten up by the wages of boatmen. Goomsai Ram Seth of Luchmungurh, who has branch firms at Seersa and at Bombay, has now sent for an experimental cargo from Bombay, in order to prove in how short a time goods shipped at Bombay, and brought up the river in boats lightly laden, and taking advantage of the season of favorable winds, can be landed at Bahawulpore, and conveyed thence to the markets at Bhiana and Delhi. Should the result of his venture be favorable, his example will no doubt have many followers, and we shall in course of time see this channel of commerce vie with that from Calcutta to Delhi, and in a great measure supersede the long and expensive land route from Bombay via Pali.

2dly. On the Commerce between the marts of Seersa and Bahawulpore.

14. Of the traffic created between the marts of Bahawulpore and Seersa by the opening of the new road, I have little to say. In the outset, the Seersa merchants anticipated a great demand for the groceries which they bring from near Shamli, and export Westwards. Their anticipations have not been realized. The consumption at Bahawulpore itself is not very great, and that place is already well supplied by the channel of the Sutlej, from Lodiana and the Jalindar Dooab; and when our merchants would have sent on their investments to Sukkur where a demand for them existed, they discovered that the heavy duties they would have to pay in clearing out of Bahawulpore, would leave them little or no profit on the investments. To avoid these ruinous duties, they are now put to the inconvenience of sending their goods outside of Bahawulpore to the river side, and there keeping them

until they can hire a boat to take them on to Sukkur; and yet in spite of this drawback my impression is, that when bullock carts come to be used instead of camels on the new road, it may successfully compete with the river route in supplying Upper Scindh with the groceries and drugs in demand there, which can be procured cheaper, and of better quality from the eastward of Seersa, than from the neighbourhood of Loodhiana and Jalindar. The Seersa merchants will also have the advantage of bringing back a return cargo, thus making two profits when the river-going trade only yields one. In addition to sugar, molasses, cotton, and other groceries, the Seersa merchants should be able to export to Bahawulpore the indigo grown about Hansi, which is of superior quality to that now purchased by the Lohani merchants at Bahawulpore and Shudabad for export to the western markets.

3dly. On the Commerce between Afghanistan and India.

15. Another branch of trade that will be more immediately affected by the opening of the new route, is that from Affghanistan to India carried on by the Lohanis. This is so well known, that a detailed account of it is not requisite. The number of camels laden with merchandize that annually pass through Dera Ismael Khan towards India, led by these enterprizing traders, has been estimated at 7,000. Those who bring horses, are compelled by the Sikh government to take the road to Lahore; very few of them come by Multan and Bahawulpore. Those who bring green and dried fruits, madder, assafœtida, and other merchandize, find their way to our frontier from numerous directions, driven by exactions into circuitous routes, and travelling any distance, and undergoing any hardships, rather than pay duties. Besides the Lohani *kafilas* engaged in this trade, there are *kafilas* belonging to Mooltan Affghans, amounting to about 700 camels, that go annually to Candahar, and as far as Lucknow and Cawnpore in our provinces. There are also merchants at Bahawulpore and at Sawulghur in the desert, whose camels, 300 in number, ply between Dera Ismael Khan, Jang Mani, Multan and our provinces, making journies later in the season, and purchasing the goods they import from the Lohanis. The reduction of the duties in the Bahawulpore and Bikanir states, followed up by the removal of all difficulties in the supply of water to caravans, should have the effect of concentrating in the new road a great part of the trade above described; and the Lohanis freed in a great measure from former exactions,

should be able considerably to increase the amount of their imports and exports.

16. It has been suggested, that the opening of the direct road across the desert, would enable the Lohanis to make two journies to India instead of one. The time saved affords no ground for such an expectation, nor is it possible in their present mode of travelling; for they can only cross the Suliman range with their families previous to, or after, the heavy falls of snow, and they must leave their families to spend the depth of winter in Damoun, that is on this side the Passes; but if it has not effected what was impracticable, as a measure facilitating the access of the Lohanis to our marts and the supply of their wants, the opening of a direct road, together with the reduction of duties through two of the three foreign states intervening between Affghanistan and India, must be admitted to have effected much for commerce between those countries. Much eventual benefit will I am persuaded also arise from this measure to the trade between Bombay and the marts of Upper India and the Punjab; and if I might be permitted to suggest a further measure by which commerce by these two channels might be promoted, it should be the revival of an old proposition for the establishment of a mart or annual fair at a convenient position on the frontier, at which the merchants from Affghanistan, from Hindoostan, and from Bombay, might meet and exchange their goods free from the vexatious exactions practised by native governments.

With the reference to the wants of Commerce on the channels above described, suggests the establishment of a mart or annual fair on the frontier.

The inconvenience suffered by our merchants trading between Seersa and Upper Scinde, from the want of an intermediate mart at which they might store or dispose of their goods free of exorbitant duties has been already noticed, and this inconvenience would be more severely felt should the Bombay trade with Delhi and Amritsir follow the new channel. As regards the effect of a mart or fair in the Lohani trade, it may be remarked, that though generally the Lohanis are indifferent to the distance they have to travel to supply their wants, there are many of them, even now, who find it their interest to dispose of their goods at marts nearer home, where they have to pay heavy duties, and their wants are but indifferently supplied. Many of them who cross the Suliman range with the last *kafila* of the season, may wish to

return with the first, and will dispose of their goods at Deera Ismael Khan, at Multan and at Bahawulpore, as has been observed, to the merchants of those places, rather than undertake a long march into Hindoostan. Others again, whose wants are supplied at Jang Miani, Multan, Shujabad and Bahawulpore, never come beyond those marts. At Jang Miani, after disposing of their own goods, they purchase large quantities of a particularly strong coarse cloth, resembling *dosooti*, which, dyed in indigo, is the common wear of the Affghan peasantry. At Shujabad, they purchase indigo, and at Multan and Bahawulpore indigo and coarse chintz, which are exported to Bokhara. It is therefore obvious, that were a mart once established in a convenient locality on the frontier, where no duties should be levied, the number of Lohanis who would dispose of their goods there instead of coming on to India, would be much increased, indeed that the number might be expected to increase in proportion to the ability of our merchants to supply their wants.

17. Should the foregoing remarks dispose you to view the establishment of a mart as a practical object deserving of encouragement, it will not be difficult to determine its position. The town of Bahawulpore, or a site in its immediate neighbourhood, would unite advantages that could not be found in any other place. It is situated both on the high road of the trade from Affghanistan to India, and on what promises at no distant period, and with due encouragement, to become the high road of trade from Bombay to Delhi, or from Europe to the marts in Upper India. It is moreover easily accessible from the capitals of Rajpootana, from Delhi, and from Amritsir, and is near to Multan, itself a great mart.

Proposes Bahawulpore as the best position for the mart.

18. In conclusion, as connected with the subjects adverted to in this letter, I beg to draw your attention to the annexed tabular statement obtained from the Government Native Agent at Bahawulpore, shewing the increase of trade in the rivers Sutlej and Indus, since the opening of those rivers early in 1833. It will be seen, that in the first year the number of boats that descended the river was four, laden with 2700 maunds of merchandize, which, I may observe by the way, was sold at a dead loss, owing to the obstacles opposed to our merchants by the jealous fears of the Ameers of Scindh. In

Submits a short tabular statement.

Of increase o traffic on the rivers Sutlej and Indus above Sukkur, from 1833 to 1843.

the last year, 1843, the number of boats is stated at 1125, and the quantity of merchandize at 2,14,416 maunds. All the 1125 boats, save the three alluded to in a former part of this letter as bringing cargoes from Bombay up the Indus, are downward-going boats, engaged in carrying groceries and drugs from near Ferozepore and Lodiana, and grain from near Sutpore and Mithankote to Scindh. It must be admitted, that the greater portion of the 2,14,416 maunds of merchandize so-called is grain, the demand for which in Scindh arises from the presence there of a large body of our troops; that the trade up the rivers from Bombay is at present trifling; that the population on the rivers is too scanty and too poor to be able for many years to come to purchase any quantity of our Europe manufactures; but I would still draw your attention to the general progress of traffic on the rivers. In 1833, on the course of the Sutlej and Ghara from Loodiana to near Bahawulpore, there were no boats but one or two at each of the ferries, ten or twelve miles apart, used for crossing the river. The use of oars aud masts and sails was unknown, and a voyage down or up the river to any distance unheard of. We now see the boatmen of the upper course of the Gharra and Sutlej become expert sailors, and making a voyage to Sukkur and back is a common occurrence, while the actual number of boats between Loodiana and Sukkur has increased from 250 to upwards of 750. These are results which appear to me to justify our entertaining sanguine hopes of one day seeing the neglected rivers to the N. W. of the Indian Continent vie with those to the East, as channels of commerce and civilization.

I have, &c.

(Signed) F. Mackeson,

Pol. Dept. Supt. Office, *Off. Supt. Bhutteeana.*

Bhuttee Territory, Seersa, 15th April, 1844.

Route from Seersa to Bahawulpore.

Territory.	Civil Authorities.	Names of Stages.	No. of Houses.	No. of Shops.	Distance. Miles.	Furls.	Yards.	Road.	Rivers.	Tanks.	Wells, Pucka & Kucha. No.	Depths of Wells. Water below surface.	Water in well.	Intermediate Villages.
												Cubits.		
British.	Superintendent, Bhuttee Territory at Seersa.	Sirsa, ...	a town	..	..	..	..	..	..	....	..	60	10	Dhemoor on the Cuggur, large jheel.
		Raneea, ...	400	20	12	7	9	good.	..	1 large tank.	5 p.	70	5	Water of wells slightly brackish. Jugmullerah, 40 houses, 3 k. wells, 1 tank, water 80 cubits. Kunjurnallah, 2 kucha wells, 15 houses.
		Bunnee,..	40	2	14	2	100	good, rather heavy.	..	2	1 p.	..	..	Water sweet. Soorewalla, 2 pucka wells, one out of order, 1 tank, 20 houses, grove of trees. There is a hard road to Bhutnere from this via Peerkamreea, distance 13 and 17.
		Teebee, ...	50	1	8	4	30	sandy first part.	..	kucha tanks.	5 p. one in use.	..	..	Water sweet. Mussanee 1 pucka well, 1 kucha tank, 20 houses. Sereka, 1 pucka well, 2 kucha out of order, 70 houses. Kumranee, 1 kucha well, 1 tank, 15 houses. (Water sweet.)

Route from Seersa to Bahawulpore,—(Continued.)

Territory.	Civil Authorities.	Names of Stages.	No. of Houses.	No. of Shops.	Distance. Miles.	Furls.	Yards.	Road.	Rivers.	Tanks.	Wells, Pucka & Kucha. No.	Depths of Wells. Water below surface. (Cubits.)	Water in wells. (Cubits.)	Intermediate Villages.
Raja of Bickuneer's Territory.	Governor General's Agent in Rajpootana at Ajmere.	Bhutnere, ...	200	100 open	10	6	180	Sandy at starting, good.	..	1 1 Tank, the largest on the road down, retains water throughout the year.	52 p. 5 in use.	100	6	A fort, 52 bastions, water sweet. Site of village, (deserted.) Ditto, Mustnath site. Ramser, 2 furlongs of road to S. 10 houses, 1 kucha well, 1 tank. Futtyghur, 25 houses, 1 p. well out of repair, 2 k., water at 100 cubits. Dhinganah, 2 houses. Subjeepoorah, 4 houses inhabited, 1 kucha tank. Buhlolungur, 2 houses inhabited, 1 kucha well, sweet water. Kalee Bunga, 5 houses, 1 k. well in ruins, water sweet, site of a vill. *Note.*—Dablee, a village 8 miles and 6 furlongs from Bhutnere north of Futtyghur, and about 4 miles distant from this road, has 15 houses and 9 pucka wells of drinkable water, and a tank. Gharees sometimes take this road from Bhutnere to Dablee, and thence to Kalee Bunga and Loodhana.

Route from Seersa to Bahawulpore,—(Continued.)

Territory.	Civil Authorities.	Names of Stages.	No. of Houses.	No. of Shops.	Distance. Miles.	Furls.	Yards.	Road.	River.	Tanks.	Wells, Pucka & Kucha. No.	Depths of Wells. Water below surface.	Water in wells.	Intermediate Villages.
												Cubits.		
Raja of Bickuneer's Territory.	Governor General's Agent in Rajpootana at Ajmere.	Peelee Bunga, ..	7	..	16	6	120	good.	..	1 small tank.	1 k.	102	..	Water in well sweet. Loodhana, 20 houses, has a large tank, 1 pucka well of good water, 90 cubits from surface.
		Soorutghur, ...	1300	150 shops of kinds.	14	7	120	good.	..	2 tanks, one of which retains water the whole year.	5 p.	86	5	Wells large and water plentiful. Sheopoorah, 15 houses. Nekonah deserted.
		Sirdarghur, ...	41	3	9	5	40	good.	..	1	2k. 1p.	80	..	Water good.
		Belocheea, ...	11	2	19	7	20	good.	..	1	1 k.	81	$3\frac{1}{2}$	Well water very brackish and deficient in quantity.
														In the straight road over the sand, 2 villages on the road.
														Dubyal and Roopnasur, the latter 4 houses.
														Rahur.
		Anoopghur, ...	220	5 open	17	3	200	good, last heavy.	..	....	7 p.	83	$3\frac{1}{2}$	Water good. Site of a village. Boundary of Bahawulpore territory.

X Z

Route from Seersa to Bahawulpore,—(Concluded.)

Territory.	Civil Authorities.	Names of Stages.	No. of Houses.	No. of shops.	Distance. Miles.	Furls.	Yards.	Road.	River.	Tanks.	Wells, Pucka and Kucha. No.	Depths of Wells. Water below surface.	Water in wells.	Intermediate Villages.
												Cubits.		
Nawab of Bhawulpore's Territory.		Hullur or Sirdarghur, ..	100	4	12	..	..	good	..	....	2 p.	76	4	Water good.
		Pholera, ...	400	20	11	6	180	good generally.	..	2 tanks nearly filled up with sand.	4 p.	70	4	Tibah khansur or site of a village. Good water.
		Meerghur, ...	20	4	15	..	..	good.	..	....	1p. 4k.	56	4	Water very drinkable. Jamghur, deserted, a tank and a well, water bad and brackish from not being drawn.
	..	Maroot, ...	250	40	11	6	120	good.	..	....	13 p.	43	6	Water good and plentiful.
	..	Chappoo, ...	10	..	9	6	100	good.	..	....	3 k.	40	3	Slightly brackish, a pucka well building by the Nawab.
		Kalleepoor, ...	..	..	12	7	140	Here and there scarcely.	..	....	1p. 3k.	32	4	Do. do. built by the Nawab.
		Pawarewalla, ..	40	..	15	4	80	Heavy full miles last half.	..	....	5 k.	23	5	Sweet water, ditto.
		Bahawulpore, ..	..	..	13	3	50	good.	..	....	..	..	..	Hummutee, 40 houses, 15 wells, 12 kucha 3 pucka, sweet water at 12 cubits below the surface.

(Signed) F. Mackeson, *Officiating Superintendent.*

Statement of number of Boats laden with Merchandise and with quantity of ditto, which have passed down and up the rivers Sutlej and Indus, from Loodeeana, Ferozepore, Bahawulpore, Mithenkote to Sukkur and back, and in each year from A. D. 1833 *to* 1843.

Year.	No. of Boats.	Quantity of Merchandise. M.	S.	C.
From January to December, 1833, ...	4	2,700	0	0
From January to December, 1834, ...	3	2,200	0	0
From January to December, 1835, ...	7	5,800	0	0
From January to December, 1836, ...	9	6,800	0	0
From January to December, 1837, ...	11	8,700	0	0
From January to December, 1838, ...	20	11,000	0	0
From January to December, 1839, ...	350	1,97,525	0	0
From January to December, 1840, ...	500	1,99,764	0	0
From January to December, 1841, ...	650	2,40,476	0	0
From January to December, 1842, ...	495	2,17,385	6	0
From January to December, 1843, ...	1125	2,44,416	0	0

(Signed) F. Mackeson,
Officiating Superintendent.

Note on a recent Fossil Fresh-water Deposit in Southern India, with a few remarks on the origin and age of the Kunker, and on the supposed decrease of Thermal Temperature in India. By Capt. Newbold, *M. N. I. Assistant Resident, Kurnool, Madras Territory.*

The geographical locality of this deposit is in the Kurnool territory, about a mile easterly from the village of Lunjabunda, in about latitude N. 15° 30′ and longitude E. 78° 3′.

It lies in a jungly defile, or transverse valley, crossing the range of hills which, running nearly N. by E. and S. by W. divides Kurnool into two portions. This range commences about five miles S. of the city, and after traversing the whole length of the Kurnool territory, passes below the Zurairoo valley, to the E. of Gooty, where it is connected with the Cuddapah chains, which, curving easterly, terminate near the coast in the Naggery ranges.

These ranges consist principally of the diamond-sandstone and limestone, and comprise within their area the diamond mines of Condapetta, Chinnoor, Ovalumpully, Munimudgoo, Banganpilly, Ramulacota, and others of less note. The fossil deposit rests on this sandstone conglomerate, which at no great distance is seen reposing on granite, with a dip of 10° to the S. of E.

A little to the E. of this, the diamond limestone intervenes between the granite and sandstone, underlying the latter in conformable dip and stratification.

A spring rising from the foot of a mound of conglomerate, composed of fragments of the sandstone rocks cemented by kunker, marks the site of the fossil bed, which lies in a slight depression above this mound, and considerably out of the reach of the spring in its present state. It is only a few yards in extent, and has evidently been deposited by the spring under former conditions, to which I shall allude presently. The imbedding matter is also a kunker, but one of a much harder, compact, and siliceous nature than that at present seen around the margin of the spring, and below the mud at the bottom. Portions of it are sometimes so siliceous, as to give fire with steel and scratch glass; other portions of the rock contain more lime, are less compact, and effervesce freely with acids. The colour is a light brownish-grey; fracture varying from flat-conchoidal to earthy.

The shells imbedded are fresh-water, principally *melania*, with a few small *planorbes*, and are all of existing *genera*. The number of the former is so proportionally great, as to excite surprise in persons who have not studied the segregarious habits of the inhabitants of fresh-water and terrestrial shells. Besides the shells there are impressions and casts of the stems of grasses, reeds, &c. perfectly fossilized by carbonate of lime.

The shells afford instructive examples of the various stages of fossilization. Some of their coats have been completely converted into sparry carbonate of lime; others have been filled with the imbedding paste, which, when the shell is broken off, exhibit a cast with a highly polished exterior. Others again are lined with drusy crystals of quartz; in some, this siliceous crystallization is just beginning to roughen the surface of the interior, and is hardly perceptible without the aid of a lens; thus exhibiting interesting examples of the processes by which fissures in rocks are lined and filled up with minerals which we look in vain for in the enclosing walls; geodes of calcedony and agate, with calc spar and crystals of quartz and zeolite in the midst of calc spar. I have seen a solitary and beautiful pyramidal hexagon of rock crystal, glittering like a diamond in the whitest snow, in a mass of the saccharine marble of Carrara.

None of the shells have lost their carbonic acid, although they have

parted with most of their colour; and some are quite empty as if imbedded but yesterday; most have been evidently entombed in a dead state.

As no trap or other volcanic rock was at hand to account for the silicification of this fresh-water limestone, I proceeded to examine the present deposit of the spring a few yards West of the fossil bed. Its water I discovered to be slightly thermal, having a temperature of 85° 3′ Farht. which is a few degrees above the mean temperature of the spot, isothermally calculated; the height above the sea as roughly approximated by the boiling point of water, is about 1250 feet, and the average temperature of the ordinary wells about 80° Farht.

The present deposit of these waters is a brownish-grey calcareous mud, about six inches thick, mingled with sand, imbedding similar fresh-water shells and a minute specimen of *paludina*. Stems of grasses and leaves were also found in it; some of the latter apparently just decayed, while others are blackened by carbonization; none were fossilized.

Below the mud lay a deposit of nodular kunker, quite distinct in character from that of the fossil bed, being white and earthy, externally pulverulent or chalky, but internally compact and hard. I did not observe any shells or plants in it. The depth of this layer could not be ascertained for want of leisure, and better instruments for digging under water than a geological hammer.

The water of the spring is tasteless, inodorous, and free from gaseous bubbles; and, instead of any free carbonic acid gas, is slightly alkaline, turning reddened litmus paper into a faint greenish blue; oxalate of ammonia, and muriate of baryta produced a considerable white precipitate. That from the muriate of baryta effervesced with dilute nitric acid, shewing the precipitate to be carbonate of lime. A thin slice of gall nut suspended in the water, detected a trace of iron. A minute portion of silica remained after evaporation.

The present layer of mud then, as we have just seen, is more of a mechanical deposit than the subjacent white kunker, which is evidently a chemical precipitate, and concretionary in character, while that which has fossilized the shells and plants, is far more siliceous: so much so indeed, as to resemble in some parts the siliceous tufa deposited by the hot springs of Iceland, more than the common calcareous kunker of India.

The natives declare, that both the volume and heat of these thermal springs, (of which I have within the last two years discovered several in the diamond formation,) are on the decrease. There is no question

that the spring under description is fast drying up, for the *Reddy* of the village pointed out to me land, now waste, which, within the last forty years, had been irrigated by it. It now yields but a scant supply to the cattle and the beasts of the forest. The traditionary accounts of diminishing temperature are by no means so satisfactory, since the Hindoos had no means of measuring warmth or cold.

However, the examination of the deposits in and around the mouth of this spring goes to support what the natives say, assuming that the more siliceous deposit containing the fossils is of an older date than the two at the bottom of the spring, and formed when the spring was more abundant, and its water hot enough to hold a considerable quantity of silica as well as lime in solution, possibly combined. As the heat decreased, the water would lose most of its silica, but still retain the lime; at this period it may be inferred, that the kunker was precipitated as the water cooled on the earth's surface. As the heat still diminished, the portion of lime brought up in solution decreased to the state in which we now see it. That such is the fact appears from the circumstance of the water of two other and warmer springs, which I have since discovered in the same formation, holding considerably more lime in solution than this.

The waters of two other thermal springs in the same formation still deposit lime as a kunkrous incrustation on their sides and on the rocks in their course.

These had a higher temperature; viz. 90° and 91° 3′; the minerals held in solution are similar, but the proportion of lime is greater. One fact is worthy of note, that they were all slightly alkaline, and contained no perceptible free carbonic acid.

In order to ascertain the interesting problem, as indicated by the traditions of natives, and the difference between the quantity and quality of the present and ancient deposits; viz. that the heat of this part of the interior of the globe is decreasing, it would be desirable to keep a register not only of the thermal springs of S. India, but of those far hotter fountains that gush from the great Southern line of dislocation of the Himalayan strata, and the trap hills of Central and Western India.

The heat of the springs might be annually or triennially noted with compared thermometers. After many experiments, I find existing meteorological causes generally affect the temperature of such springs in a sensible degree; and great care should be taken, in

making successive experiments, that the meteorological conditions be as far as possible similar. The time of the year should be the dry season; and the time of day, sun-set and sun-rise.

The plains and valleys of India are often covered with sheets of kunker, sometimes upwards of 70 feet deep, overspreading places where it could never have been deposited by rivers or rivulets; and where now, not a spring or drop of water is to be seen. Along the edges of trap dykes, we occasionally observe mounds of kunker precisely resembling those around the mouths of existing kunker-depositing springs, but we look in vain for the springs that deposited the former.

Still these dwindled remains of springs are generally to be found where kunker prevails at no great depth from the surface, deprived of their heat and of the greater part of their mineral character, which renders the water better adapted for the use of man and animals. Most of the native diggers in boring for a well, consider kunker as almost a sure sign of the vicinity of water. If there can be any doubt after what has been said of the certainty of the vast sheets of kunker at present seen covering waterless plains, and the arid summits of hills of S. India having been formed by springs, many of which are now dried up or diverted, it will be removed on an inspection of a vertical section of the rocks which underlie it. These, whether trap, granite, the hypogene schists, sandstone or limestone, will be found invariably to be penetrated by nearly vertical fissures, through which the kunker appears to rise like trap in a dyke and to overflow the surrounding surface, and like trap, to introduce itself into any horizontal or other seams, imparting the appearance of beds of kunker alternating with gneiss, &c. On a more minute inspection it will be found, that the kunker has in reality been precipitated chemically from the water of springs that now, or formerly, found vent to the surface through these fissures. The thermal waters holding the lime in solution as they cooled in approaching the surface deposited the lime as they ascended.

I had an opportunity in 1840, of studying the formation of travertine in the old volcanic area around Rome, and found it to assimilate that of the Indian kunker in all the leading facts. The calcareous conglomerates at present forming along the shores of the Red Sea and Mediterranean, are little different from the present kunkrous conglomerates of India.

It may also be added, that the surface soils of S. India, whether of the red alluvial, or the black regur, are frequently so strongly impregnated

with muriate and carbonate of soda, as to be utterly unfit for the purposes of agriculture. Many of the springs in such situations are still brackish, holding a portion of these salts in solution; but are quite inadequate to have caused their diffusion in the superincumbent soil to the present immense amount.

It is difficult to classify a formation still going on, and to fix the period, geologically, when it commenced, as it is seen in all rocks from the granite to alluvium. We have sufficient evidence, however, to divide it into two periods; viz. that immediately prior to the deposition of the regur, which it often underlies in thick beds, and the present formation, going on. The kunker characterized by the remains of the mastodon at Hingoli, and the kunker conglomerate imbedding the mammoth near Nursingapore, like the travertin of Rome, which imbeds the remains of this animal and of existing species of fresh-water shells, may be referred to the post pleiocene period.

Since the discovery of the first fossil bed I have found another near the temple of Hoodelaity on the same range, of considerably greater extent, being more than ten feet thick, resting on the ledge of a precipice thirty feet above the present level of a stream formed by a thermal spring. But not a vestige of the spring that deposited this bed is to be seen. The stems and plants it fossilizes are in a much more distinct and perfect form, and in addition to Melania and Planorbis, I found fragments of Unio, and a shell having the suborbicular shape of Cyrena with the thinness of Cyclas; two forms of fresh-water Conchifer that often pass into each other; the hinge was not visible. A very perfect impression of a leaf, and a number of curious cylindrical bulbiform and reniform bodies, probably vegetable forms, were found. The vertical surface of this cliff presents in its layers all the curved and geodic forms seen in oriental agate, and imbeds solid fragments of a more ancient kunker. The height of the sandstone cliffs forming the sides of the fissure, (probably a fault,) I found, by a trigonometrical observation, to be 75 feet from the bed of the stream.

Specimens of some of the fossil shells, and supposed petrified vegetable forms have been forwarded to the Museum of the Asiatic Society. I have little doubt of the longer and thinner cylindrical bodies being stems of grasses. They are seen in the rock fossilized in clusters upright as they grew, with fresh-water shells half entangled about their roots.

(*Wednesday Evening, the 3rd April*, 1844.)

The usual Monthly Meeting took place on Wednesday evening, the 3rd of April. The Honorable the President in the chair.

The following new Members were ballotted for and declared duly elected:—

B. Colvin, Esq. C. S.

W. Quintin, Esq. C. S.

The usual communications were ordered to be made to them.

The following list of Books presented and purchased was read:—

Books received for the Meeting of the Asiatic Society, on the 3rd of April, 1844.

Annaler for Nordiske Oldkyndigheid, 1840-41 and 1842-43. Kjobenhavn. Presented by the Society of Northern Antiquarians, 2 Nos.

The Edinburgh New Philosophical Journal, July to October, 1843. Presented by the Editor.

Mémoire sur la Découverte de L'Amerique, par Charles Christian Rafn. Copenhagen, 1843. Presented by the Society of Northern Antiquarians.

London, Edinburgh, and Dublin Philosophical Magazine, third series, No. 151-152, October 1843. From the Editors.

Journal Asiatique ou Recueil de Mémoires, quartième série, tome I, No. 4, Avril. No. 5 Mai tome II, No. 7-8, Julliet et Aout. Presented by the Society.

Royal Asiatic Society of Great Britain and Ireland Anniversary Meeting and Twentieth Annual Report of the Council. London, 1843. Presented by the Society.

List of Members, Committees, &c. of the Royal Asiatic Society of Great Britain and Ireland, 1843. Presented by the Society.

Die Königliche Gesellschaft für Nordische Alterthumskunde. Jahresversammlung, 1842. Copenhagen. Presented by the Society of Northern Antiquarians.

Leitfaden zur Nordischen Alterthumskunde. Copenhagen, 1837. Presented by the Society of Northern Antiquarians.

The Oriental Christian Spectator, second series, March 1844, vol. V. No. 3, Editor.

Bullétin de la Société de Géographie, deuxieme série, tome XIX. Paris, 1843. From the Society.

Proceedings of the Geological Society of London, vol. IV, part I, 1843, No. 93. Presented by the Society.

Proceedings of the Royal Society of Edinburgh, 1843, No. 22. From the Society.

Royal Society of Northern Antiquarians, Copenhagen, 6 Nos. Presented by the Society.

The Yacna of the Parsis in the Zend language, but Gujarátí character, with a Gujarát translation, paraphrase and comment, by the late Framji Aspandearji. From the Bombay Branch Royal Asiatic Society.

The Bispard of the Parsis in the Zend language, but Gujarátí character, with a Gujarátí translation, paraphrase and comment, by the late Framji Aspandearji. From the Bombay Branch Royal Asiatic Society.

Notice Historique sur la Vie et les Ouvrages de M. le Major Renuell, par M. le Baron Walckenaer. From the Author.

Meteorological Register kept at the Surveyor General's Office, Calcutta, for the month of February 1844. From the Surveyor General's Office.

Transactions of the Royal Society of Edinburgh, vol. xv, part III. From the Society.

Journal des Savants. Paris, Julliet et Aout 1843. Purchased.

The History of the Mohammedan Dynasties in Spain, translated by Pascal de Gayangos. vol. II. Printed for the Asiatic Society by the Oriental Translation Fund.

Les Sultans Mamlouks de Makrize, tome II, lib I. Printed for the Asiatic Society by the Oriental Translation Fund.

The Calcutta Christian Observer, April 1844. New series, vol. v. No. 52. Presented by the Editors.

Pritchard's Natural History of Man. London, 1843. Purchased.

Researches into the Physical History of Mankind, by J. C. Prichard, vols. I, II, III, Purchased.

Mémoires de la Société Royale des Antiquaires du Nord, 1840–43, Section Asiatique. Copenhagen, 1843.

Read the following letter from the Society's London Agents, Messrs. Allen and Co.:—

H. Torrens, Esq. *Secretary to the Asiatic Society of Bengal.*

Sir,—We have the pleasure to acknowledge the receipt of your favor of the 17th November last, enclosing a bill of lading for six cases of books, which are to be forwarded as addressed, and we are requested to transmit receipts for the same to the Society. We shall have much pleasure in attending to your instructions. We doubt if we shall be able to obtain receipts for all the cases, but if we can assure the Society that they are duly delivered, we conclude that will be quite satisfactory.

London, January 30, 1844.

W. H. Allen and Co.

Read the following correspondence with reference to the transfer of the Buchanan MSS. and Drawings from the Botanic Garden to the Library of the Society:—

The Secretary to the Government of Bengal, Home Department.

Sir,—I am instructed on the part of the Asiatic Society of Bengal to beg, that you will submit to the Honorable the Deputy Governor of Bengal, the respectful request

of its Members, that His Honor will be pleased to order the Buchanan Drawings and MSS. now deposited at the H. C. Botanic Garden to be placed in the Society's Library.

The vast amount of knowledge in almost all its branches, relating to India, contained in these volumes, and the great expenditure to Goverument at which it was obtained are well known, while it is not less notorious, that partly from non-publication and partly from its almost entire inaccessibility as now deposited, this noble monument of the solicitude of the Government of India for the development of its resources has been hitherto a sealed book to the public. In order to remedy, however late, this long existent evil, the Society begs earnestly to press upon his Honor's consideration the advantage that may arise from placing such resources within the reach of all who may desire to profit by them; and this His Honor may perhaps incline to allow, might he best done by placing the drawings and documents above alluded to for general reference in the Museum of the Society; where they will be available to its officers in the several departments of science for reference and comparison.

The Society would engage to make use of this valuable material for the *public* benefit, adding to the value of its own publications by selections from the mass of the Buchanan documents, which it is hoped His Honor may gratify the Society by placing in its charge and custody.

H. Torrens,
Vice-President and Secretary, Asiatic Society.

No. 798.

From Under-Secretary to the Government of Bengal, to the Vice-President and Secretary, Asiatic Society.

Sir,—With reference to your letter of the 26th January last, I am directed to transmit the enclosed copy of one from the Officiating Superintendent of the Honorable Company's Botanic Garden, No 10, of the 13th ultimo, and to intimate, that his Honor the Deputy Governor has no objection to allow the Buchanan Drawings and Manuscripts to be temporarily deposited in the Library of the Asiatic Society, on the conditions therein stated, and has given directions to that Officer to forward them to you accordingly.

I have the honor to be, Sir,
Your most obedient servant,
A. Turnbull,
Under-Secretary to the Government of Bengal.

Dated Fort William, 25th March, 1844.

No. 10.

From W. Griffith, Esq. *Offg. Supt. H. C. Botanic Garden, to* A. Turnbull, Esq. *Under-Secretary to the Government of Bengal.*

Sir,—I have the honor of acknowledging the receipt of a letter from the Secretary to the Asiatic Society to the Secretary to the Government of Bengal, Home Department, on which I am desired to report.

2. It appears to me that there can be no objection to placing these very valuable Manuscripts and Drawings in the custody of the Asiatic Society, until such time as that Society shall have completed their publication or copies of them. But I think it should be understood, that this institution is the proper place of their permanent deposit, it being that of the Manuscripts and Drawings of Dr. Roxburgh, as it ought to be of those of all other Superintendents.* In this manner only can the series be kept complete, and each series can in this manner only guide Government to an opinion of the relative merits of the Superintendents it permits to hold this high scientific appointment. To this the almost entire inaccessibility alluded to in the Secretary's letter cannot be objected, that assuredly was never contemplated by Government, and has not existed since 1836, when it was removed by Dr. McClelland, and Government having shewn its anxiety to secure ready publication of documents, it assuredly cannot again be restored.

3. It would have been very desirable that this application had been made to Government when the fact of the Drawings and Manuscripts being here was first made known. For since that, I believe, the Society has been the means of making known zoological labours which would, had the Society's attention then been attracted prominently to these Manuscripts, &c. have been found to have been anticipated by Dr. Buchanan. The Society at this period cannot attach priority to the works of Buchanan.

4. It also appears to me desirable, that if Government decides on lending these Manuscripts and Drawings to the Society, it should be on the engagement proffered by the Society in the last paragraph of the Secretary's letter, and in exclusion of paragraph 2d, otherwise a stigma will be attached to this institution, which, as it is a public institution of Government, endowed in a liberal manner, and presumably superintended in a liberal and open manner, it cannot *in se* be considered to merit.

5. Pending the receipt of his Honor's final instructions, I shall construct a complete catalogue of the Manuscripts and the Drawings to be retained here for the information of Government.

I have, &c.

Honorable Company's Botanic Garden,
13th February, 1844.

(Signed) W. Griffith,
Offg. Superintendent.

(True Copy,) A. Turnbull,
Under-Secretary to the Government of Bengal.

The Secretary called the attention of the Meeting to the alteration which had been made in the height of the pedestals on which the busts were placed; three of them having been reduced and the busts placed upon them for inspection. The alteration was approved of.

* We doubt much if Dr. Buchanan was ever a Superintendent of the H. C. Botanic Garden ? —Ed.

Read the following letter addressed to the Sub-Secretary, by the Rev. J. J. Moore, Secretary, Agra School-Book Society :—

No. 162.

H. Piddington, Esq. *Asiatic Society's Rooms, Calcutta.*

My dear Sir,—Kindly excuse the trouble I am giving you, but will you send me a copy of all the Hindi and Sanscrit works the Asiatic Society may have for sale. They are intended for a Native Prince, and it is particularly requested, that each copy be neatly bound. They are intended for Maharaja Tukht Sing of Marwar. Maps in Hindi or Sanscrit would be also most acceptable. For the expense which may be incurred, I shall be responsible to the Society. It would be desirable if they could be forwarded under a frank, and as this privilege is allowed to Government Educational Establishments, probably in a case like the present, a similar indulgence would be granted. At all events do not let this be a bar to the transmission of the books for the Rajah.

I intend to publish an edition of the Rekha Ganita, in the Sanscrit Version of Euclid by Raja Savai Jai Sing. I understand there is a copy in the Society's Rooms which had been corrected by the late Jas. Prinsep; it would aid me very much could it be procured for the purpose of collating my MSS. with it.

25*th March*, 1844. J. Moore,
Secretary, Agra School-Book Society.

P. S.—Kindly also favour me with a few copies of the list of the Society's Books which may be for sale.

The Sanscrit works published by the Society were ordered to be forwarded, bound as requested. Upon inquiry it does not appear that the MSS. alluded to is in the Society's Library; the only copy of the Rekha Ganita, being one by Jaganath Pundit; but it was subsequently ascertained that *the* valuable copy of the Rekha Ganita, alluded to by Mr. Moore, was in the Library of the College of Fort Willam, and he was informed that a copy would be sent him if desired.

A recommendation of the purchase of several works, and a proposal to purchase a female Gayal now at Chittagong, were submitted by the Zoological Curator, which last was authorized.

Read the following letter from J. W. Roberts, Esq. accompanying the specimens alluded to :—

H. Piddington, Esq.

Dear Sir,—I have the pleasure to send you for the Asiatic Society, a few Locusts of the legion that did so much mischief to the past season's indigo crop. They are from Nudjuffghur, near Cawnpore.

When at the Museum a few days ago, I did not perceive amongst the natural curiosities any specimen of this enemy to the vegetable kingdom, and they may not therefore prove unworthy of reception.

Calcutta, 13th March, 1844. J. W. Roberts.
No. 14, *Writers' Buildings.*

P.S.—I send them as received, preserved in Cognac brandy.

Read the following letter from J. Owen, Esq., accompanying the Arms presented by that gentleman :—

To H. Torrens, Esq. *Secretary, Asiatic Society.*

Sir,—I have the honor to forward herewith certain arms taken from the chiefs who were creating the disturbances at Ningroo during the past year. No. 1 is a Naga Dao, and No. 2 a Singphoe one.

The Society's acceptance of the same will confer honor on

Yours faithfully,
On the River, 19*th March*, 1844. J. Owen.

Report of the Curator Museum of Economic Geology and Geological and Mineralogical Departments, for the month of March.

Geological and Mineralogical.

Our zealous correspondent Captain Newbold, Assistant to the Commissioner, Kurnool, has sent us from Beypoor, near Calicut, a specimen of the lignite of the beds of that locality which, he thus describes.

"By to-day's banghy I have the pleasure to forward to the Society a specimen of the lignite from a bed of considerable extent in the laterite sandstone near Beypoor, in the vicinity of Calicut, on the Western Coast, discovered by myself in 1840. It is associated with sulphur, sulphates of alumina, iron, retinasphalt and mineral coal. The shales immediately in contact have a rarely perceptible dip, are black, carbonaceous and aluminous, and contain scattered spangles of mica. The bed of lignite itself is from one to three feet thick, and can be traced about half a mile up the river. General Cullen recently writes me, that he now sees much of this carbonaceous deposit in Travancore, and that it is very extensive. It exhibits itself in beds of black clay and lignite of considerable thickness in the laterite cliffs along the W. Coast from Quilon to Venkully. Deposits of the same kind occur about the same level at the distance of two or three miles inland."

We have to acknowledge from Government, a further addition to our knowledge of the Cheduba group in a report from Lieut. Hopkinson, Assistant Commissioner, Arracan, who was also sent by the Commissioner, Capt. Bogle, to examine the spot where the Volcanic Island had appeared, and who, though he unfortunately was not acquainted with Mineralogy or Geology, has most zealously fulfilled his mission. His report will be incorporated in mine, and I may remark here, that several of his specimens are of very considerable interest.

The following are the letters from Government and from Mr. Commissioner Bogle:—

No. 687.

From Under-Secretary to the Government of Bengal, to the Secretary to the Asiatic Society.

Sir,—I am directed to transmit to you, copy of a letter from the Commissioner of Arrakan, No. 453, dated the 16th December last, and of its enclosures, relative to the visit paid by Lieut. Hopkinson, the Senior Assistant at Sandoway, to the site of the Volcanic Island which recently appeared for a time to the south-east of Cheduba, together with a box containing the geological specimens referred to in the fourth paragraph of Capt. Bogle's letter.

Cecil Beadon,
Under-Secretary to the Government of Bengal.

Fort William, 11th March, 1844.

(Copies. No. 453.)

From Capt. A. Bogle, *Commissioner in Arracan, to* T. R. Davidson, Esq, *Secretary to the Government of Bengal, General Department.*

Sir,—Capt. Williams, Senior Assistant Commissioner in charge of Ramree and Cheduba, having in a letter dated 11th August 1843, No. 1828, copy of which is annexed, intimated to me that a volcanic eruption had occurred off the S. end of "False Island" in the end of July last, and that an Island had been formed on the spot, without however conveying to me any of the particulars, I considered it proper to write to him immediately to furnish me with the fullest information on the subject.

2. In reply he acquainted me, that it was wholly impracticable to approach "False-Island" during the S. W. Monsoon, and that the difficulties opposed to all communication with "Flat Island" or "Regweng," from whence the eruptions had been observed, were of such a nature, as to preclude the hope of being able to obtain any further information before the close of the rains.

3. As both the above islands are exposed to the full force of the Monsoon, and are surrounded by innumerable dangers, it appeared to me by no means justifiable to endanger life by endeavouring to conduct any inquiries prior to the termination of the tempestuous season; but in the month of October, I determined to depute Lieut. Hopkinson, Junior Assistant Commissioner, an officer of much intelligence and enterprize, to visit the site of the reported eruptions as soon as the state of the weather in the Bay of Bengal would admit of his proceeding to sea in one of the small Government Schooners belonging to this province, and on the 21st of that month, I accordingly addressed him letter No. 839, of which a copy is appended.

4. Immediately on its receipt, Lieut. Hopkinson proceeded to the spot, and having made a full and diligent inquiry regarding the interesting circumstances reported, and taken a survey of "False-Island," he has now favored me with a report under date the 25th ultimo, No. 86, of which I beg leave to transmit a copy, together with his Map of the "False Island," for submission to the Honorable the Deputy Governor of Bengal; and by the next trip of the "*Amherst*," I shall not fail to forward the different geological specimens which accompanied Lieut. Hopkinson's report.

5. As the newly created island, which, even if it had really existed, could never I apprehend have been any thing more than a mass of rock, has disappeared, and no apparent change has been occasioned by the eruptions, Lieut. Hopkinson found but little worthy of mention; but I nevertheless feel greatly indebted to him for the promptitude with which he repaired to the spot, and for the very satisfactory manner in which he has completed the duty entrusted to him, and I trust that his report and map will meet with His Honor's approval.

6. I am aware that much of the interest which attached to these volcanic eruptions may have ceased on the return of the "*Ganges*" Steamer from her recent visit to this coast, but still I think it due to Lieut. Hopkinson, that the endeavours previously made by him to collect the fullest information regarding them, should be submitted to the Deputy Governor, and that his Honor should be satisfied, that such remarkable changes are not regarded with indifference here.

A. Bogle,

Arracan Commr's. Office, Akyab, 16th Dec. 1843. *Commissioner in Arracan.*

No. 1828.

To Captain A. Bogle, *Commissioner in Arracan and Akyab.*

Sir,—I have the honor to acquaint you, that the Soogree of "Flat Island" reports, that on the 26th, 27th, 28th, and 29th of July, a Volcano broke out a short distance, (30 bamboos, 360 feet,) he mentions, south of "False Island," and that a new Island has been formed on the spot.

Arracan S. A. Commr's. Office, Ramree,
The 11th August, 1843.

D. Williams,
Senr. Asst. Commissioner.

(True Copy.) (Signed) A. Bogle,
Commissioner in Arracan.

From the Rev. Mr. Barbe, Roman Catholic Missionary at Chittagong, we have received a box of specimens of the ferruginous sandy breccias, conglomerates and concretions of that place, some of them much resembling those sent up, I think, in 1838, by Mr. Sconce, Magistrate of that district, and of petrified wood and lignite from the same quarter. We have unfortunately no details of the locality with these specimens.

Museum of Economic Geology.

From the Bombay Branch R. A. S. Society, we have received a second box of 72 specimens for this department, and for that of Mineralogy and Geology, for which our best thanks are due. As the list is instructive, and it is always useful to have them on record, I have inserted it here.

List of Geological Specimens from Western India, presented to the Museum of the Asiatic Society, Calcutta, 2d series.

No. 1.	Calcedony with Calcspar, Rajcote.
,, 2.	Altered sandstone, Kattiawar.
,, 3.	Jasper, Waukaneer, ditto.
,, 4.	From near Rajcote, ditto.
,, 5.	Altered sandstone, Waukaneer, ditto.
,, 6.	Marble (magnesian) of which Hoossain Shah's tomb is built, Mandoo, Malwa.

No. 7 to 8. Basalt from between Mandoo and Mhow.
,, 9. Calcspar from Basalt, between Malwa and Mhow.
,, 10 to 29. Minerals from between Mandoo and Mhow.
,, 30 to 31. Basalt, Mazagon, Bombay. This takes a good polish, and is used for pedestals of statutes, &c.
,, 32. From Balmeer hill.
,, 33. ,, Ditto.
,, 34. ,, Ditto.
,, 35. ,, near Balmeer.
,, 36. Gypsum, near Balmeer.
,, 37. From Vindiah hills.
,, 38. From whitish Basalt Rock, Parell, Bombay.
,, 39 to 42. Recent formation, Allibaugh, Angria, Colaba.
,, 43 to 45. Ditto ditto.
,, 46 to 47. Ditto ditto.
,, 48. Basalt, ditto.
,, 49. Piece of Rock from near Bhooj.
,, 50. Basalt, Mazagon, Bombay. Laumonite with large crystals of Calcspar, and globules of Prehnite scattered through the Laumonite. By J. E. Malcolmson, Esq.
,, 51. Ditto. Laumonite penetrating Calespar and terminating in it, with the usual crystalline form, by ditto.
,, 52 to 53. Nummulite limestone. Cutch.
,, 54. Indurated clay containing Paludina Deccanensis, Physa Prinsepii. Geol. Trans. vol. v, pl. 47. Altered into a basaltic looking rock. *Saugor.*
,, 55. Indurated clay (fresh water.) Gharri, foot of Nalchah Ghaut, (Vindiah hills,) between Mandoo and Mhow.
,, 56. Indurated clay from Gharri, near Mandoo, with Melania Quadrilineata.
,, 57. Indurated clay with tertiary Lacustrine fossils. Gharri, foot of Nalchah Ghaut, northern escarpment of Vindiah mountains, between Mandoo and Mhow.
,, 58. Cast of Physa Prinsepii, &c. Gharri, near Mandoo.
,, 59. Physa Prinsepii, compressed. Gharri, near Mandoo, see Dr. Voysey on Gawilghur, As. Res. vol. xviii, p. 187.
,, 60. Melania, quadri-lineata. Geol. Trans. vol. v, pl. 47. Gharri.
,, 61. Cast of Melania, quadri-lineata. Ditto.
,, 62. Cast of Paludina Deccanensis. Gharri.
,, 63. Cypris Subglobosa. Gharri. Geol. Trans. vol. v, pl. 47, fig. 3.
,, 64. Paludina Deccanensis, Chara Malcolmsonii, Cypris Cylindrica, and Subglobosa. Munnoor Deccan, Geol. Trans. vol. v, pl. 47.
,, 65. Variety of Calcedony from the Vindiah hills.
,, 66. From the Bund of Arrore, Scinde.
,, 67. Flint, pounded and burned, and worked for the formation of painted tiles, &c. at Hydrabad, Scinde. Sir Alexander Burnes.

No. 68. Flint for Pottery, west of the Indus opposite Hydrabad, Scinde. Sir Alexander Burnes.

,, 69. Believed to be the pounded flint, No. 68, used in pottery. From Sir Alexander Burnes' collection, but the label lost.

,, 70. Natron, Scinde. Sir Alexander Burnes.

,, 71. Sand of the Indus, label lost. Sir A. Burnes' collection.

,, 72. Laumonite, Mazagon, Bombay.

John G. Malcolmson,

Bombay, 9th February, 1844. *Secretary, B. B. R. A. S.*

Presentation of a Silver Standish to H. Torrens, Esq.

When the Geological Curator had concluded his portion of the business of the evening, the President, The Hon'ble W. W. Bird, rose and addressed the Meeting as follows. Before we proceed farther, I wish to draw your attention, gentlemen, to the beautiful specimen of Indian workmanship lying on the table in the shape of a silver inkstand, which is intended as a testimonial to Mr. Torrens, from his associates of the Asiatic Society, expressive of the deep sense entertained by them of his distinguished services. It will be in the recollection of many here present that about the commencement of last year, he was obliged, for reasons then stated, to resign the office of Secretary which he had for some time held with so much credit to himself, and so much advantage to the Society, and it was on that occasion that this testimonial was voted to him, which, under the superintendence of Mr. Piddington, has assumed the form of the very tasteful object now before us, and on which no pains or expense have been spared to render it worthy of Mr. Torrens' acceptance.

As few can have the opportunity of examining this elegant specimen of Indian manufacture, I will shortly describe it, and I cannot do so more appropriately than in the words of Mr. Piddington, who has kindly favored me with a memorandum on the subject.

"The style," he says, "of the testimonial is Moorish, (Arabesque,) chosen as the most appropriate one in reference to Mr. Torrens' able and spirited translation of the Arabian Nights, (the Alif Leila,) dedicated by him to the Asiatic Society; the only translation of that classic work which has exactly painted to the English reader in his own language, and with the colours of his own imagination, the minds and the life of the children of the East.

"It is placed on a basement of shawl-work of which the pattern is the Shamrock, in allusion to Mr. Torrens' Irish origin. The frosted wreath above this basement is composed of the rose (Persia,) the Lotos (India,) and the Jessamine (Arabia.) These flowers are from nature. All the other decorations are from the Alhambra, or from the great Mosque at Cordova, two of the wonderful and inimitable monuments of a people, who seem to have been almost led to construct them as lessons to the human race of the imperishable glories of science, literature and the arts, as compared with those of conquest.

"The centre and surmounting ornament is an exact model of the Fountain of Lions in the Alhambra. It has been chosen, not only from its beauty, and its numerous historical associations with the magnificent era of the Arabian Khalifs of Spain, but also from

its being in itself a curious and a solitary instance of the practice of an art forbidden in the Koran, by Mahomedan artists. It is one of those unique and precious monuments which the arts have given to History and to Poetry, at the sight of which a thousand associations with the annals of a whole nation, (the European Arabians,) now extinct, are awakened in the mind. I need not remark here, that every page of these annals from the landing of El Tarikh to the glories of the Ommiyades, the winding sheet of Abderahman, the conquest of Granada, and the dismal farewell of the heart-broken Moors to their terrestrial paradise the Vega of Granada, is pre-eminently the classic romance of History: of which the Fountain of the Lions is still the talisman.

"It was the beautiful custom of the Arabs of old to adorn their public and private buildings, and even their weapons and domestic furniture, with inscriptions allusive to their purposes, or suggestive, or laudatory, of great, and good, and useful works and thoughts, whether religious or secular. We have in our tribute adopted this custom also, and while we have appropriated one tablet to commemorate our gift, we have, in the Arabic inscription on the opposite compartment,

لاماء يا صاحبي ازكى من الصدق
ولاكقلب سليم منبع الحق

of which the paraphrase may be rendered—

"There is no fountain like the mind,
"There is no water clearer than Truth,

conveyed an aphorism of which no one better than Mr. Torrens can appreciate the hidden meaning."

Such is the testimonial, and in presenting it to Mr. Torrens on the part of the Society, I beg to assure him, that it affords me the most sincere gratification to be their representative on the occasion, and the channel of communicating to him a token of estimation so well deserved. I beg also to assure him on their part, and likewise on my own, of the satisfaction we feel at his having been so obliging as to resume the situation in which the services, now so inadequately acknowledged, were rendered by him, and their conviction, that the Society of which he is so distinguished a member, will be indebted to him for still further services, and that he will earn for himself, by the exertion of his eminent talents, still further testimonials of their esteem and approbation.

Mr. Torrens then rose, and replied in nearly the following words:—

Honorable Sir, and Gentlemen, my Fellow-members of this Society,—I will not in ordinary phrase attempt to speak of embarrassment in now rising to address you. My gratification is too heartfelt and sincere to admit of any such sensation, and under its influence I will endeavour to express on the spur of the moment my thanks to you for this splendid, and to me, inestimable testimonial. If I do not do so in set terms, you

must pardon me, for I have felt myself unable to write a set-speech in anticipation of this high honor now conferred, and I have therefore judged it best to trust to the spontaneous utterance of the heart, if I may so say, which sometimes by its truth gives weight and dignity to even the sorry phrases of a speaker but little practised.

Gentlemen, the first and most anxious desire of every man, who has in any sort addicted himself to literary pursuits, is the thirst for literary distinction. This I have felt in common with thousands a thousand times better qualified to earn, and to deserve it, than I ever have been, or could ever be, but my position offered to me little expectation of being at any time able to achieve it. The days are passed when men engaged in this country as public servants, could without any dereliction of duty enjoy the luxuries of lettered ease, and follow steadily up their literary labours, or their plans of historical or scientific research, *pari passu* with the performance of their official functions. The calls of office have greatly multiplied as was natural they should do, with the extension and consolidation of the British power in this country, and the enjoyment of that leisure which enabled a Jones, a Colebrooke, or a Wilford to enrich our sum of knowledge by the valuable results of their researches, can be no longer hoped for by those who have succeeded them. It may be said there were giants in those days, and doubtless few have since appeared who could rival or compete with the galaxy of able, and learned orientalists, whose labours in the early days of this Society rendered its name illustrious in the scientific world of Europe,—who led to the foundation of the Asiatic Societies of London and of Paris,—nay, more, who brought about that taste for the study of Sanscrit literature, which in Germany particularly has led to discoveries in philology, and in the history of nations as traceable thereby, not less invaluable than unexpected.

In addition to the disadvantage above alluded to, I had in taking the office of your Secretary, the discouraging example of what in this enervating climate over-exertion in literary, combined with official labours, will effect, in the person of my esteemed and lamented friend and predecessor, James Prinsep. Where such a mind was unequal to support the strain, I felt how idle and absurd it would be in any one less qualified for the struggle by varied ability, and copious information, to attempt to venture on it. I therefore determined, instead of endeavouring at something new, to work out to the best advantage, the unemployed and unillustrated treasures of our various collections, and, conscious of my incapacity save in superficial attainments on a limited field, I decided on attempting to obtain the services, and superintend the labours of men really competent in distinct branches of science. Our then President, Sir Edward Ryan, warmly supported my views, the local Government, to its honor be it spoken, came forward with liberal and timely aid, while the Honorable the Court of Directors consented to uphold us in that spirit of munificence which it has often evinced in matters of science. Thus, Gentlemen, I found shortly afterwards associated with me, our curators, Messrs. Piddington and Blyth, and while I laboured to convert the Journal, (then my property,) into a Journal of General Science in accordance with the plan laid down by Sir William Jones on instituting this Society, instead of attempting chiefly to work out in it the doubtful problems of antiquarian research,—while I was occupied in procuring material for our Transactions,—in arranging and digesting our records, and in providing for the printing and publication of Oriental works (and I more

particularly allude to the reprint of the three first volumes of the *Fatwa-i-Alumgeeri*) —these gentlemen busied themselves on the one hand in re-arranging our geological and mineralogical collections, then to all appearance in hopeless confusion, and in classifying them by catalogues recovered from the disordered mass of our papers,— and on the other in re-stocking—I may say, in creating—our Museum of Zoology. If our relations with other scientific bodies have been renewed, and enlarged,—if the name and character of our Society has been worthily maintained—if we are now possessed of a Museum which taken in conjunction with our Library, and our antiquarian treasures, places this Society first as a scientific body in the dependencies of the British Crown,—I take no credit to myself apart from these, my zealous and worthy fellow-labourers.

Happily placed in conjunction with them, it has been my fortune to have by your kindness accorded to me as your Secretary, that literary distinction, so earnestly, and ambitiously desired, but which I could have hoped to obtain in no other but such circumstances. There are times, Sir, when such distinction, proud as it is, becomes doubly welcome, and I am in the position to feel its value at this moment most sensibly.

Let me, Mr. President, express to you briefly my personal feeling of gratitude for much good will shewn towards me, and for the constant support which you have afforded me in my endeavours to carry out arrangements, of which you were pleased to approve, for the benefit of the Society. Let me here express to the Asiatic Society of Bengal, my heartfelt acknowledgments for this magnificent token of their good opinion, and to assure them, that its receipt highly enhances the steady inclination I have ever had to devote in so far as occasion permits, my poor services to the promotion of their interests.

Gentlemen, I most heartily and sincerely thank you.

In pursuance of the desire expressed by Members, the following Memorandum was circulated by the Sub-Secretary, and under the order upon it the annexed plate of the Standish is given.—H. P.

MEMORANDUM BY THE SUB-SECRETARY.

The Honorable the President and Committee of Papers, Asiatic Society.

After the conclusion of the meeting of Wednesday evening, several Members expressed a wish, that a lithograph of the Standish presented to Mr. Torrens, should appear in the Journal.

The Sub-Secretary solicits the orders of H. H. and the Committee.

He may remark, that such objects are strictly within those of the Society. which in the words of its illustrious founder, embraces in its enquiries, "whatever is performed

*

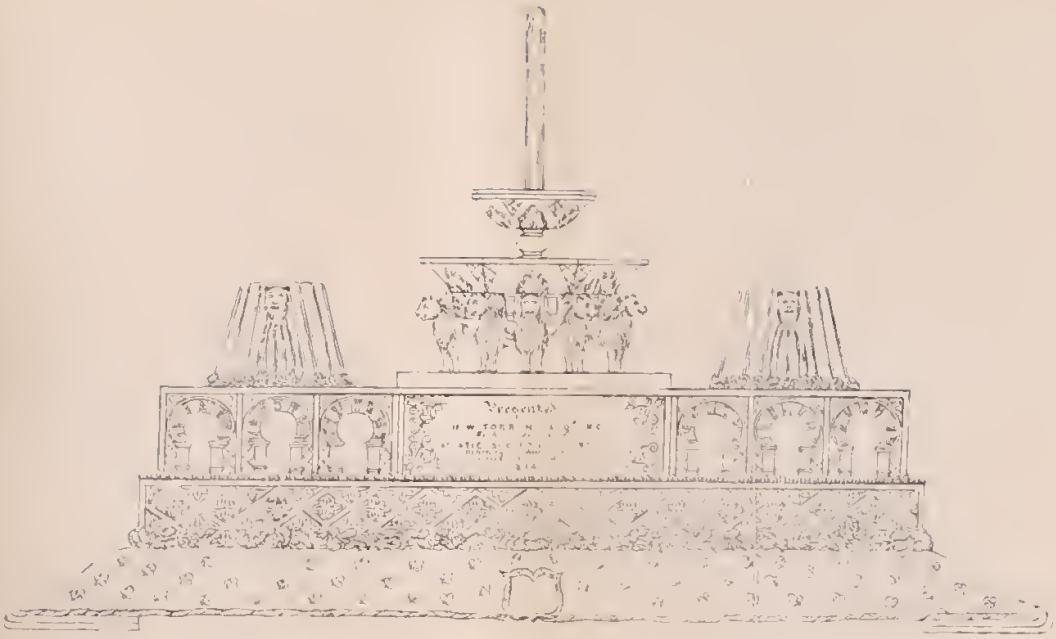
by man or produced by nature," and it may not be, moreover, uninteresting to place upon record, any step in the fine arts made under the patronage of the Society.

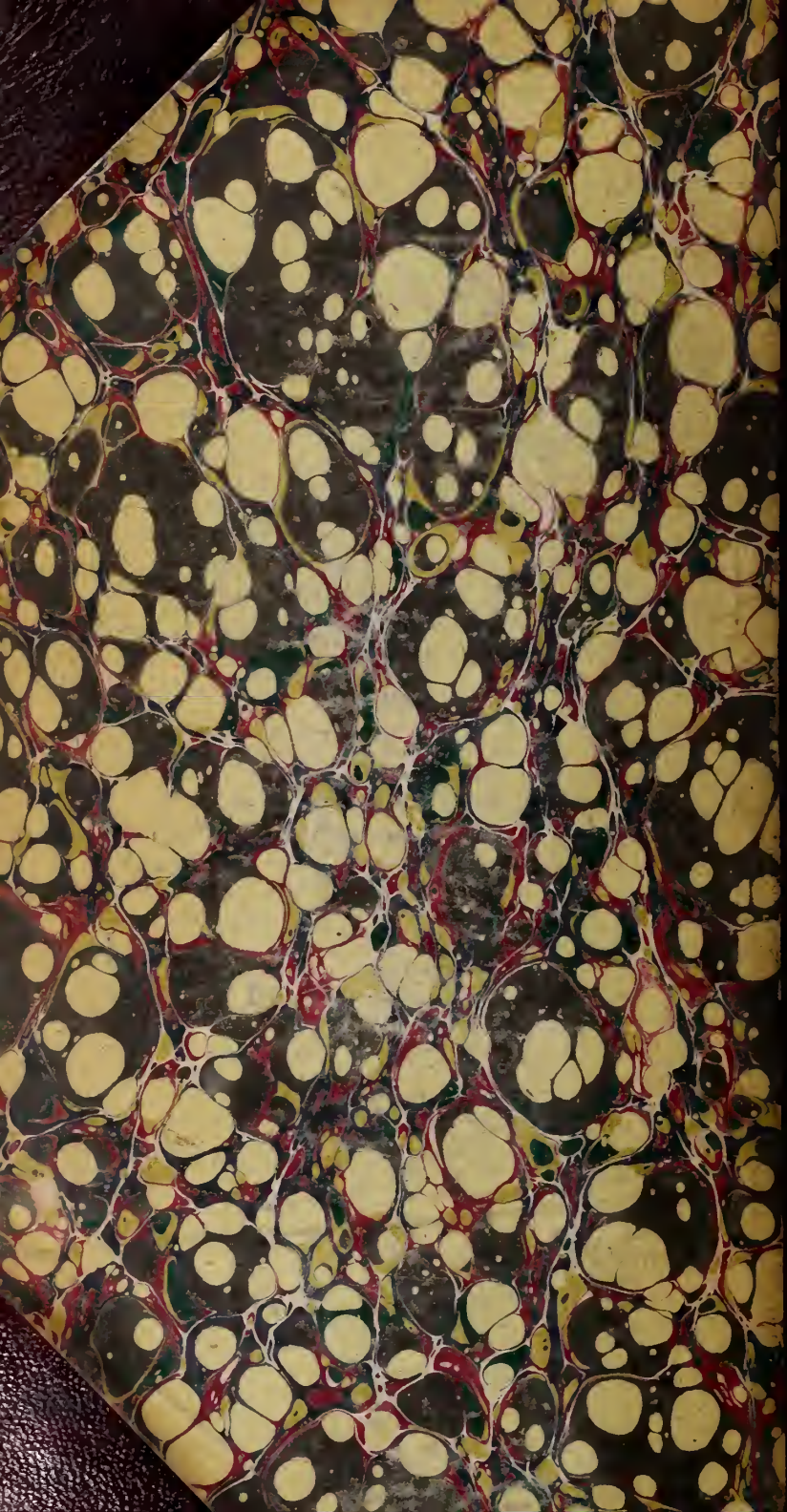
Many Mofussil Members also have subscribed to the Testimonial, and will no doubt be happy to see their money satisfactorily laid out.

H. Piddington,

Museum, 4th April, 1844. *Sub-Secretary, Asiatic Society.*

For all the foregoing communications and presentations, the best thanks of the Society were voted.



Elevation of the front of the Silver Ink Stand —
presented by the Anatomy Society of Bengal to H Torrens Esq
3rd April 1844

For use in Library only